



European Monitoring Centre
for Drugs and Drug Addiction

TECHNICAL REPORT
**Environmental substance use
prevention interventions in Europe**

February 2018

Authors:

Sinziana I. Oncioiu, Gregor Burkhardt, Amador Calafat, Mariangels Duch, Parvati Perman-
Howe, David R. Foxcroft

Contents

Acknowledgements.....	4
Executive summary.....	5
Introduction	8
1. Prevention traditions and environmental prevention.....	9
2. Assessing the availability of environmental prevention measures in Europe.....	17
3. Environmental prevention in Europe — an emerging picture	29
References	33
Appendices.....	40

Acknowledgements

The content of this report is the responsibility of the authors alone, but many people contributed advice and support. In particular, the report includes an analysis of the findings of a survey of experts working in the prevention field from across Europe and we are very grateful to all those who gave up their time to complete the survey. We are also indebted to the European Society for Prevention Research (EUSPR) and the European Institute of Studies on Prevention (IREFREA) who carried out the survey and the Science for Prevention Academic Network (SPAN), the EMCDDA's Reitox network and the United Nations Office on Drugs and Crime (UNODC) who assisted by circulating the questionnaire to their networks. We would also like to thank the following individuals who provided valuable advice at different stages of the study: Jean Adams, Pierre Arwidson, Rosaria Galanti, David Hawkins, Kimberley Hill, Laurie Kelly, Cátia Magalhães, Theresa Marteau, Sharon O'Hara, Esther Papiés, M. J. Paschall, Harry Rutter and Paul van Soomeren.

Executive summary

There is growing recognition of the importance of environmental factors in health behaviour. Environmental prevention complements the more established approaches of providing information/warnings and skill/competence development.

Traditional substance use prevention approaches in Europe have predominantly focused on warning and informing people of the risks and consequences of drug use and/or informing them of safer ways to use substances. More recently, developmental approaches aimed at helping young people to develop the necessary social skills and competences to avoid substance use have been used alongside informational approaches.

These types of interventions focus on the individual as the main driver of behavioural change. The role of executive functions and how they develop during childhood and are influenced by upbringing is often neglected. It has been claimed that an over-reliance on approaches that fail to consider executive functions contributes to the persistence of health inequalities. Many behaviours we perform every day are automatic and are generally reactions to common and familiar stimuli, demonstrating the importance of environmental and social cues, and of automatic processes in influencing behaviour. This may explain the limited success of prevention approaches that focus solely on individual responsibility for decision-making and self-control.

The purpose of environmental prevention policies and interventions is to limit exposure to unhealthy or risky behaviour opportunities (or to promote the availability of healthy opportunities). This approach differs from traditional behavioural prevention approaches as it targets the automatic system of behaviour (one that does not require deliberate cognition). Thus, it requires lower individual 'agency'; individual personal resources, such as conscious decision-making, motivation and intent, are less important in these types of intervention.

Nevertheless, there are barriers to the implementation of environmental prevention measures, including the lack of knowledge of their theoretical underpinnings; criticism of them as expert defined; and the perception that they are complex and difficult to implement.

Environmental prevention covers a wide range of measures and it is therefore useful to classify these interventions, both to understand the underlying logic of the different types of interventions and to guide mapping of intervention availability. The operational definition proposed in this publication categorises environmental prevention measures into three categories: **regulatory**, **physical** and **economic**.

A survey of prevention experts in Europe was undertaken to provide an overview of the availability of environmental prevention interventions in the region and the extent of implementation of measures (enforcement of regulatory and economic measures or existence/provision of physical measures).

To gather this information, an electronic questionnaire was distributed to the emailing lists of five European organisations whose members have expertise in one or more of the domains related to substance use. Participants opted in to the survey and suggested other potential participants. The questionnaire link was also circulated through social media.

Responses were obtained for all but three ⁽¹⁾ EU countries, and from Norway and Switzerland. The final analytical sample described in this publication consisted of 117 subjects with knowledge of substance use environmental prevention measures in their country.

The questionnaire considered a number of environmental prevention measures for illicit drugs, alcohol and tobacco and asked respondents whether they were available nationally or locally. Of the 49 measures presented to the experts answering the survey, 39 referred to regulatory or economic environmental prevention measures and 10 referred to physical environmental prevention measures.

The results show that, across the 11 regulatory environmental measures for illicit drugs (which included decriminalisation of some drugs and regulations concerning 'legal highs'), on average 83 % of respondents reported national-level availability. For alcohol, across the 15 regulatory or economic measures, the average availability was 52 %, and for tobacco (13 regulatory or economic measures) on average 60 % of respondents reported national-level availability. In contrast, in the case of illicit drugs, alcohol and tobacco combined, across six common physical environmental prevention measures, just 19 % of respondents reported national availability. However, local availability of these physical measures was higher — reported, on average, by 56 % of respondents.

Generally, strong enforcement of regulatory and economic measures was perceived to be quite limited, especially for illicit drugs and alcohol. For tobacco, however, enforcement was deemed strong for the majority of the available regulatory and economic measures, which might be due to the high visibility of such policies.

The survey is subject to several limitations: the opportunistic sampling procedure is not exhaustive and self-selection may introduce bias; there are a limited number of observations owing to a relatively low number of responses per country; and there was a higher response from some countries, notably Spain. Importantly, the responses are subjective as they rely on participants' awareness of the availability of specific measures and their perceptions of the level of enforcement or implementation of different measures.

Nevertheless, this publication is the first attempt to provide an operational definition of environmental prevention and an overview of the extent to which it is used at the European level. Therefore, it represents a useful starting point for future research regarding the extent to which environmental prevention interventions are used in Europe. By collecting information using the classifications of regulatory, economic and physical measures, we have been able to identify differences between the availability and implementation of different types of environmental prevention measures. This can help to identify the gaps in provision and to explore the reasons for them, highlighting barriers to implementation.

Future work should build on this initial study to provide a more comprehensive picture of changes in the availability and implementation of environmental prevention measures in all European countries over the next 30 years. This approach to prevention policy and practice is in line with current calls to redirect public health efforts, with greater focus on marginal

⁽¹⁾ No respondents from Bulgaria, Denmark or Finland were recruited.

gains through environmental interventions that rely on automatic processes that require very little or no effort.

Introduction

In recent years, the discourse around the wider determinants of health has led to growing recognition of the importance of environmental factors in health behaviour. The prevention field, however, has been slow to adapt to this broader focus, with prevention measures overwhelmingly targeted at knowledge and attitude change as a mechanism for bringing about behaviour change, despite a lack of strong evidence of the effectiveness of such methods. The adoption of environmental prevention measures has been hampered by this individual-level focus, by poor understanding and definition of the term 'environmental prevention' and by a lack of discussion around the mechanisms by which environmental prevention measures work.

This publication aims to address these issues by providing an operational definition of environmental prevention, particularly highlighting those aspects that differ from traditional prevention approaches, and by giving a short introduction to its theoretical foundations with reference to the current literature (Section 1). Using the operational definition presented in Section 1, it then aims to provide an overview of the current availability of environmental prevention measures for substance use in Europe, presenting findings from a survey of prevention experts across Europe (Section 2).

The topic of environmental prevention in Europe is considered in the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) work on prevention (see, for example, http://www.emcdda.europa.eu/topics/prevention_en), based primarily on information reported annually by the Reitox network of national focal points. Currently, the EMCDDA collects information on the topic through a prevention workbook, which has a specific section addressing environmental prevention. However, as no definition of the term 'environmental prevention' is provided in the workbook, and as the section takes the form of an open-ended question, there is large variation across countries both in the types of measures and in the level of detail included in the answers about their content and implementation.

This publication seeks to provide a platform for improving the information available by offering a definition of the concept and a structured method of collecting information. In addition, while the EMCDDA prevention workbook collects information through designated public health entities in each country in a top-down manner, this study sought to exploit the knowledge of prevention experts working in the field, including in academia, drug prevention/treatment agencies, and governmental and non-governmental institutions. This has the potential to fill in any gaps in the information available from the national reporting system, allowing the collection of data from some countries that hitherto have provided limited or no information on the topic.

Within the tobacco and alcohol fields, there have been previous attempts to assess the availability of substance use environmental prevention measures in Europe, for example using the Tobacco Control Scale (Joossens and Raw, 2014) or various alcohol policy scales (Karlsson et al., 2012; Lindemann et al., 2015). However, these studies did not provide an operational definition of environmental prevention, and their aim was to quantify the level of control in each country. This report focuses on mapping the availability of measures and assessing the extent of their implementation across countries rather than assigning implementation scores for individual countries.

1. Prevention traditions and environmental prevention

Traditional prevention approaches in the alcohol and drugs field in Europe have predominantly focused on warning people about the risks and potential consequences of substance use and/or informing them about safer ways to use substances. A more recent approach, which recognises the impact of social influences and relationships on behaviour, focuses on helping young people develop the necessary social skills and competences to navigate this social world (Babor et al., 2017). These traditional approaches can be categorised as informational (warning and informing) or developmental (socialising and enabling) (Foxcroft, 2014), and are adopted in many prevention fields and behavioural domains, for example in the fields of violence, diet and obesity, exercise behaviour, smoking and sexual risk taking.

Informational approaches: warning and informing

Typical examples of informational approaches are mass media campaigns, awareness-raising events and other actions that aim to persuade young people in schools, on the street or in nightlife settings that alcohol and other drug use can have negative consequences. Strategies for self-protection might then be proposed. This is in line with Gigerenzer's (2014) belief that risk literacy can be taught, helping people to make more balanced decisions. Similar informational approaches target obesity by telling people how to improve their eating habits. While these approaches are popular and widely used, scientific support for their effectiveness in changing behaviour is relatively weak across many behavioural domains compared with other types of prevention approaches (Almeida et al., 2016).

One problem with this approach is the failure to take into account the role of cognitive function. The underlying premise of informational approaches is that human beings are capable of easily translating such knowledge and risk-savviness into daily and sustained protective behaviour. However, to do so requires additional skills, among them attentional control, inhibitory control, working memory and cognitive flexibility — also called executive functions. These functions are, to some extent, influenced by upbringing and early childhood development, which determine the extent to which individuals are able to successfully plan, focus attention, remember instructions and deal with multiple tasks (Bernier et al., 2010; Cuevas et al., 2014; Lucassen et al., 2015).

In addition, people with a higher socioeconomic position (the well-educated) are often the first to abandon harmful behaviours, such as smoking and unhealthy diets, or to adopt behaviours that are found to promote health, such as leisure-time physical activity, since they will generally have access to the greater personal resources needed to translate knowledge into behaviour. As a result, and as shown by recent European studies, the prevalence of smoking, excessive alcohol consumption, poor diet, obesity and other factors varies according to socioeconomic status, contributing to inequalities in morbidity and mortality (Mackenbach, 2014). For example, a recent cross-generational study in France found that, among new cannabis users, those who were less educated were more likely than the most educated to become daily users (Legleye et al., 2016); similar observations have been made in respect of tobacco use (Kuntz et al., 2016; Pampel et al., 2014), suggesting that the better educated have more resources to translate health information into more protective health behaviour.

It has been claimed that an over-reliance on informational and educational strategies that focus solely on individual decision-making and neglect the context in which they are made contributes to the persistence of health inequalities (Baum and Fisher, 2014). This does not mean that information provision is futile. Information and education have a place in societies that value an informed public (Dewey, 1938). Provision of information may help optimise behaviours (for example adopt good hygiene practices, or make informed nutritional choices) or initiate them (for example putting on seat belts, recycling); but information alone will do little to affect behaviours, particularly those that are not consciously or rationally determined (such as behaviours with impulsive characteristics).

Challenging perceptions of social norms

A more recent and sophisticated development from simply giving information about risks and consequences is the provision of targeted information to correct mistaken perceptions about social norms.

As humans develop, learn they behaviours from a variety of sources — parents and family members, other significant adults and peers. One particular driver of behaviour seems to be the perception of social norms, be they descriptive norms ('everybody seems to do this') or injunctive norms ('everybody seems to accept this'), which, over time, can lead to the normalisation of certain behaviours (Pennay and Measham, 2016). When behaviours have become normalised, they are also perceived as normal by those who do not adopt them.

Perception of social norms seems to influence alcohol use (Dieterich et al., 2013; Lee et al., 2007; Rimal, 2008; Szmigin et al., 2011), tobacco use (Eisenberg et al., 2008; Franca et al., 2009) and cannabis use (Buckner, 2013; Ecker and Buckner, 2014). Young people are more likely to adopt behaviours when they consider them normal, frequent or socially accepted among peers (Perkins, 1986), even when they are aware of social or physical consequences of such behaviour (Dermota et al., 2013; Stacy and Wiers, 2010; Yap et al., 2012). This helps explain why some mass media campaigns have backfired (Hornik et al., 2008): their very existence conveys the meta-message that the behaviour they aim to address is frequent and normal.

Social norm interventions aim to address these shortcomings (Berkowitz, 2002) by correcting certain exaggerated normative beliefs about the use of substances or other behaviours among peers and about how much they are actually socially accepted — that is, clarifying that substance use is not normative (frequent and accepted). These 'normative education' strategies, among others, can be incorporated in school-based prevention as part of comprehensive social influence programmes (Vadrucci et al., 2015) and used with university students (Pischke et al., 2012).

The rationale of some other interventions (such as brief interventions) is to raise awareness of the fact that an individual's consumption pattern (or sexual behaviour, or body mass index (BMI)) exceeds that of many other people with comparable characteristics, to motivate them to consider behavioural change.

There is little evidence, however, of the effectiveness of social norm interventions. A systematic review found that social norm interventions alone were not effective in reducing alcohol use and misuse among college students (Foxcroft et al., 2015), suggesting that social norm interventions, just like other information provision, may be insufficient to bring about behaviour change.

Skill- and competence-based approaches: socialising and enabling

Another category of behavioural change techniques (Michie et al., 2015) focuses on developing individuals' competences, thus enabling and capacitating people to respond to challenges and cues. These skill-based strategies aim to mitigate the shortcomings of informational approaches by complementing them. Such developmental and educational strategies involve skills and competence training in order to help develop prosocial habits and behaviours, and social versatility. By these means, developmental approaches can help young people to acquire protective attitudes and self-control mechanisms through experiences that develop personal skills, such as self-control, goal setting and motivation, alongside social skills, such as empathy, assertiveness and communication.

Attitudes and beliefs are shaped by experiences and through the process of learning new behaviours (Foxcroft, 2014). This is the underlying principle of most life-skills approaches, parenting programmes, self-control training (Pokhrel et al., 2013) or 'adventure pedagogy', often used in youth work. There is some evidence of effectiveness for certain interventions (Faggiano et al., 2008; Foxcroft and Tsertsvadze, 2011), although these approaches can be costly and complex to implement well across different social and cultural settings.

Automatic processes and spontaneous behaviour

The traditional approaches of warning and informing and of socialising and enabling require interventions that aim to develop or change attitudes, norms or habits. However, many behaviours we perform every day are automatic and are generally reactions to common and familiar stimuli. Long before Kahneman and Frederick (2005) wrote about dual thinking processes (fast and automatic versus slow and reflective), it was known that humans often act automatically and impulsively, while virtually inventing a posteriori the supposed rationale for their behaviour (Nisbett and Wilson, 1977).

For example, individuals who go along with a poor decision because everyone else agrees, or who lose control in an ecstatic crowd, or who are manipulated by an authority, frequently rationalise their behaviour post hoc, convincing themselves and others that it was the result of a conscious decision when, in reality, it was an automatic reaction to environmental cues. In addition, research on cognitive dissonance (Festinger, 1957) found that subjects rationalised and explained a posteriori their behavioural choices depending on how such behaviour was reinforced or had to be consistent with their beliefs.

Automatic processing occurs when someone undertakes a learnt behaviour, such as consuming an alcoholic drink, smoking a cigarette or riding a bicycle; in other words, executing the behaviour becomes habitual. Automatic processing can, however, also occur as a response to a novel stimulus that one has not previously been exposed to. Interventions that alter the environment therefore have the scope to prevent initial onset of risk-taking behaviours and to subconsciously alter habitual risk-taking behaviours (Hollands

et al., 2016). For example, reducing portion sizes provided in supermarkets and restaurants may have the effect of reducing consumption in someone who consumes too much and at the same time prevent those eating the right amount from increasing the amount they eat in order to avoid waste.

As humans spontaneously and automatically respond to a number of positive cues (visual, olfactory, sexual, sensorial), the weaker their impulse control, the more frequently and intensely they approach these cues (Fleming and Bartholow, 2014; Grant and Chamberlain, 2014; Ostafin et al., 2014; van Hemel-Ruiter et al., 2014). Over time, this can lead to an increased attention bias for such cues in the sense that they gain greater salience within the individual's overall perception. Environmental prevention interventions may seek to alter attention bias; in other words, these interventions aim to shift the focus of attention from a familiar, less desirable, stimulus to one that evokes health-promoting decisions. This can occur through altering the design of the physical environment, or aspects of it, to influence choice, termed 'choice architecture'.

Choice architecture refers to the context in which individuals make decisions, and Thaler and Sunstein (2008) propose that individuals can be 'nudged' by changing choice architecture. In other words, people's behaviour can be steered in a particular direction while preserving their freedom of choice (that is, without forbidding any options). The economic environment can be altered to incentivise individuals to change their behaviour (see, for example, Quigley, 2013) but there is also the potential for non-financial incentives within the physical environment to prompt behaviours. For example, a wider, and therefore safer, cycle lane may be an incentive to cycle.

Tendencies to selectively follow stimuli (approach bias) are more difficult to control in situations where fun, arousal, a stimulating environment or social triggers are present. Such processes are well documented for alcohol and other drugs (Cousijn et al., 2013; Grant and Chamberlain, 2014; Houben and Wiers, 2008; Rooke et al., 2008). In the case of health behaviours, the presence of visual stimuli can, without being noticed, increase the consumption of food — which was originally neither desired nor needed — (Watson et al., 2014), tobacco (Lipperman-Kreda et al., 2014) and cannabis (Freisthler and Gruenewald, 2014). This association has often been described for alcohol (Fleming and Bartholow, 2014; Kuntsche and Kuendig, 2005; Young et al., 2013), although the direction of causality is difficult to prove (Gmel et al., 2016).

These observations further question the concept of self-determined and rational human behaviour and draw attention to the importance of environmental and social cues, and of automatic processes. This is particularly relevant for the many occasions when risky behaviours are most likely to occur: in situations where fun, arousal, a stimulating environment or social triggers are present. In these environments, controlled and safe substance use or other protective behaviours become a particular challenge.

This may explain the limited success of prevention approaches that focus solely on individual responsibility for decision-making and self-control: people may not intend to get drunk or eat unhealthily, but could still yield to a vast array of stimuli (Labhart et al., 2017). It can therefore be argued that evidence-based interventions at the individual level (strengthening decision-making, social skills and impulse control) should be supported by environmental prevention interventions at the population level. This multi-level approach

recognises synergies of influences and how interventions in the physical, economic, policy, and sociocultural microenvironments and macroenvironments interact with behavioural and biological factors at the individual level (Sniehotta et al., 2017).

Environmental prevention

Environmental prevention complements the more established approaches of information/warning and skill/competence development. The purpose of environmental prevention policies and interventions is to limit exposure to unhealthy or risky behaviour opportunities (or to promote the availability of healthy opportunities) (Burkhart, 2011; Foxcroft, 2014). This approach differs from traditional behavioural prevention approaches as it targets the automatic system of behaviour (one that does not require deliberate cognition). Thus, the approach requires lower individual 'agency': individual personal resources, such as conscious decision-making, motivation and intent, are less important in these types of intervention (Adams et al., 2016).

A key feature of environmental prevention is that it exploits our knowledge about automatic, natural and non-conscious behaviours for preventive purposes, in multiple behavioural domains. The systematic and structured use of environmental prevention approaches can therefore complement other evidenced and valued approaches for prevention.

Types of environmental prevention

Environmental prevention measures target the contexts for behaviour through changing the prompts and cues that guide behaviour. The opportunities for intervention are wide, and it is therefore useful to classify the types of intervention, both to understand the underlying logic of the different types of intervention and to guide mapping of intervention availability. Generally speaking, interventions can be classified into three different types: **regulatory**, **physical** and **economic**.

Regulatory environmental prevention interventions/measures are interventions that bring about change to the regulatory environment to control what is allowed. This includes changing legislation, or laws, to proscribe certain behaviours, or introducing regulations and rules to restrict and constrain undesirable behaviours (or even to promote desirable behaviours) — for example, national legislation prohibiting drug use, or under-age drinking, or drinking and driving. Other examples include local regulations regarding bike lanes, or policies relating to smoking at work or school. Laws and regulations can also be used to prevent vested interests from promoting unhealthy or undesirable behaviours, for example restrictions regarding tobacco or alcohol advertising, or requirements for plain packaging of cigarettes.

Changes to the **physical** environment are another type of environmental prevention measure. Interventions targeting the physical environment alter properties or the placement of objects, stimuli or any built element within microenvironments (such as offices and bars) or macroenvironments (such as cityscape and landscape) to foster certain health-related behaviour changes. Examples of such interventions include redesigning alcohol glasses intended for use in recreational settings (e.g. making them taller and narrower but of smaller volume), installing cycling lanes or encouraging walking or cycling by providing supermarkets and grocery stores near places of work or residences.

Changes to the **economic** environment to prompt more adaptive, healthier, behaviours, or to prevent harmful behaviours, are another type of environmental prevention measure. The costs of healthy/unhealthy options may be influenced through taxes, pricing policies and subsidies. For example, lowering the cost of healthier food options or prices of non-alcoholic drinks including water in recreational venues (such as pubs and bars), increasing taxes and prices of tobacco products, alcoholic drinks or sugary consumables ⁽²⁾, or issuing subsidies (vouchers) to disadvantaged or vulnerable consumers (such as weekly vouchers that can be exchanged for milk, fresh fruit, vegetables, infant formula milk).

Regulatory, physical and economic categories are not entirely distinct from each other; rather, there is a continuum of environmental prevention and these three groupings are intended to provide a framework for categorising interventions. Indeed, from different theoretical or academic perspectives, the same intervention could be described as belonging to different categories. For the purpose of the mapping exercise, which aimed to establish a panorama of environmental prevention interventions across Europe, these categories provide a useful way of organising the questions that were asked.

These three areas, the physical, the economic and the regulatory, are key targets of environmental prevention efforts. In addition, **social context** is an important influence and moderator on health behaviour and intervention success. At the centre of the social context are social interactions — the ways that people act towards or influence one another, for example acting as role models, influential peers or normative agents (especially in social networks). Our behaviours are informed by our past interactions, and how we respond to regulatory, physical or economic characteristics is influenced by this social context. The social context is therefore one important mediating mechanism for understanding the functioning, implementation and effects of environmental prevention measures. Figure 1 shows a model illustrating how the different types of environmental prevention measures seek to influence both risk behaviours and social context, which themselves interact.

⁽²⁾ See, for example, <http://www.behaviouralinsights.co.uk/health/behaviour-change-and-the-new-sugar-tax/>

Figure 1. Hypothesised working model of environmental prevention



Barriers to implementation

Environmental prevention strategies are often shown to be effective in reviews of the evidence for different prevention approaches (Bühler and Thurl, 2015; Burton et al., 2017; Strang et al., 2012; UNODC, 2015). However, problems remain, and attempts to implement environmental prevention strategies can face resistance for a number of reasons. Historically, societies have tended to reject interventions that they consider constraining and to refer strategies such as information provision and education, or strategies that regulate other people’s behaviour (Diepeveen et al., 2013; Pechey et al., 2014). These arguments have been raised by industry advocacy and other groups campaigning against regulation and environmental design changes (Katikireddi et al., 2014).

Controls on behaviour in public places, or restrictions on purchase age or opening hours, are often met with resistance from the public. For example, night-time sales of alcohol had been banned for several years in one German federal state, with beneficial health effects reported ⁽³⁾. The ban was recently lifted because its opponents successfully argued that the state should not be allowed decide at what time citizens can buy alcohol. Similar arguments are frequently used to oppose regulatory environmental interventions at a population level, which are denounced on the grounds that they are paternalistic or reflective of a ‘nanny

⁽³⁾ http://www.landtag-bw.de/files/live/sites/LTBW/files/dokumente/WP15/Drucksachen/3000/15_3666_D.pdf

state' (Hausman and Welch, 2010).

It is also argued that, rather than nudging individuals towards better behaviours (as defined by experts), they should be taught how to properly deal with information about risks and to adequately respond, allowing them to make informed choices (Gigerenzer, 2015). Prevention professionals often prefer to address attitudes and to empower people (Bermaoui et al., 2012), and are therefore often wary of interventions that either provide simple behavioural solutions or nudge people's behaviour in directions that have been defined as desirable by experts.

Another criticism of environmental prevention comes from an ethical perspective, it being argued that it leads to stigmatisation of those who are smokers, heavy drinkers or obese (Williamson et al., 2014). There is, however, evidence suggesting that environmental approaches contribute more to equity than other approaches, particularly more than informational approaches. The increase in the minimum price of alcoholic beverages in Saskatchewan, Canada, for example, has reduced alcohol consumption (Stockwell et al., 2012), particularly among the more disadvantaged. Similar effects were found for smoking (Brown et al., 2014), where price/tax increases consistently had the most positive impact on equity.

Baum and Fisher (2014) argue that health promotion strategies that aim to persuade people to change their behaviour fail to incorporate an understanding of the social determinants of health, which recognises that health behaviour itself is greatly influenced by people's environmental and cultural settings, and that chronic diseases and health behaviours such as smoking are more prevalent among the socially or economically disadvantaged. The authors point to the dilemma that informational approaches and policies have stronger appeal to governments, even though — taken alone — they have limited effect on behavioural change.

A possible reason is that effective and well-accepted environmental prevention strategies are often invisible (compared with, for example, mass media campaigns and other informational strategies), particularly if they consist of choice architecture. This might explain the widespread preference for awareness-raising and other informational approaches: such measures are highly visible and do not require lengthy effort to gain stakeholder involvement and engagement.

In addition, environmental strategies are often seen as complex. Many stakeholders, including the alcohol or food industries, and researchers in the field, focus on individuals rather than environments. This has created a considerable imbalance in the available evidence: it mostly covers individual-level interventions, which are therefore more known, discussed and familiar.

A particular limitation of environmental approaches might be that they are unlikely to affect the behaviour of the socially disengaged (as they are less likely to be influenced by regulations or norms, Passini, 2012) or of vulnerable groups and individuals with very impulse-driven behaviour. More intense and targeted behavioural interventions may have to be offered to these groups. Environmental interventions, by reducing exposure to conducive stimuli, can help sustain intentions developed through effective behavioural interventions and prevent risky behaviours from resurfacing over time.

2. Assessing the availability of environmental prevention measures in Europe

With the aim of providing an overview of environmental prevention interventions implemented in European countries, a survey of experts was undertaken using a clear operational definition of environmental prevention. The survey aimed to provide an insight into the availability of different environmental prevention measures and the degree of enforcement for the regulatory and economic measures or the extent of provision of physical measures.

This survey was the first attempt at systematically assessing the extent to which environmental prevention measures are being used within Europe, and it should be highlighted that availability in the context of the current study represents respondents' (experts') awareness of the availability of a specific measure in their country. Similarly, enforcement and provision represent respondents' perception of the level of enforcement or provision of a specific measure in their setting. Caution is therefore required in interpreting the findings. Nevertheless, the results provide a broad picture of the relative importance of different types of measure.

This section provides a description of the study and its findings. More details concerning the methods used can be found in Appendix A.

Methods and analytical approach

The data were collected between 20 June and 28 September 2016 through a web-based questionnaire developed on the Qualtrics platform.

Survey sampling and response

This survey aimed to gather perspectives from prevention professionals working in academia, governmental and non-governmental institutions, and drug prevention/treatment agencies. The online survey was, therefore, distributed to members who were on the email list of the following professional organisations: the European Society for Prevention Research (EUSPR), the EMCDDA, the European Institute of Studies on Prevention (IREFREA), the Science for Prevention Academic Network (SPAN), the Reitox network and the United Nations Office on Drugs and Crime (UNODC). The link was also shared through social media (LinkedIn and Twitter). The inclusion criteria were being located in Europe, being aware of environmental prevention measures and selecting a relevant area of expertise.

A total of 278 people accessed the URL and, after those who were ineligible and non-responders were excluded, 117 respondents who had filled in the questionnaire and answered the substance use questions remained and made up the sample for the analysis described in this report. For more detail of the reasons for exclusions see Figure A.1 in Appendix A.

The 117 respondents came from 27 European countries (26 EMCDDA reporting countries and Switzerland), and were aware of substance use environmental prevention measures in the European country in which they work. Of these, 79 (67 %) participants filled in the illicit drugs topic, 97 (83 %) the alcohol topic and 72 (61 %) the tobacco topic, while 108 (92 %)

answered questions about environmental prevention measures that are common to all substances. Table 1 presents the distribution of survey participants by country.

Table 1. Distribution of participants for each substance misuse topic in the environmental prevention survey, by country

Country	Illicit drugs	Alcohol	Tobacco	All three substances	Any topic
	No of participants				
Austria	3	3	4	4	4
Belgium	4	4	2	4	4
Croatia	4	4	1	4	4
Cyprus	1	1	1	1	1
Czech Republic	1	1	1	1	1
Estonia	1	2	1	2	2
France	5	7	7	8	8
Germany	2	4	4	4	4
Greece	3	2	3	3	3
Hungary	2	1	1	1	2
Ireland	6	3	2	3	6
Italy	3	5	4	6	6
Latvia	-	1	1	1	1
Lithuania	1	6	5	5	6
Luxembourg	3	2	1	3	3
Malta	1	1	1	2	2
Netherlands	2	2	-	2	2
Norway	-	1	1	1	1
Poland	2	3	2	3	3
Portugal	5	7	1	6	7
Romania	-	-	2	2	2
Slovakia	1	3	1	3	3
Slovenia	3	3	2	3	3
Spain	19	21	18	24	27
Sweden	2	3	2	4	4
Switzerland	1	1	2	2	2
United Kingdom	4	6	2	6	6
TOTAL	79	97	72	108	117

In the sample as a whole (see Table A.1 in Appendix A), the gender distribution of participants is balanced, while almost two thirds (65 %) of the respondents have more than 10 years of professional experience. The most common affiliations are academia (39 %) and health-related governmental structure (46 %), and the most common background is psychology (36 %).

The questionnaire

Participants who declared that they were aware of environmental prevention measures in their country were asked about the content, availability and enforcement/provision of environmental prevention measures. The questionnaire is available in Appendix B and the specific measures that were asked about are shown in Table 2.

Table 2. Environmental prevention measures covered in the survey

Illicit drugs	
Regulatory	Prohibition of drugs other than alcohol or tobacco (aimed at users)
	Prohibition of drugs other than alcohol or tobacco (aimed at dealers)
	Bans and restrictions on so-called 'legal highs' (new psychoactive drugs)
	Decriminalisation of some substances
	Regulation of places that trade in psychoactive substances (other than alcohol or tobacco)
	Driving under the influence of illicit substances: laws and sanctions
	Prohibition to sell illicit drugs in school proximity
	Prohibition to use illicit drugs in work settings
	Prohibition to sell illicit drugs in work settings
	Prohibition to use illicit drugs in nightlife settings
	Prohibition to sell illicit drugs in nightlife settings
Alcohol	
Regulatory	Age-related prohibition of alcohol purchase/consumption
	Bans and restrictions on alcohol advertising and promotion
	Control/restriction of production, retail sale (hours, location) and distribution of alcoholic beverages
	Licensing system for retailers of alcoholic beverage
	Drink driving legislation (maximum blood concentration)
	Prohibition to sell alcoholic beverages to intoxicated/impaired patrons
	Mandatory alcohol training for bar staff (servers, waiters)
	Bans to display alcoholic beverages at the point-of-sale in retail stores
	Limitation of alcoholic beverages at major public events
	Prohibition to use alcoholic beverages in school premises or grounds
	Prohibition to sell alcoholic beverages in school premises or grounds
	Prohibition to use alcoholic beverages in workplaces
	Prohibition to sell alcoholic beverages in workplaces
Economic	Increase the taxes and prices of alcoholic beverages
	Lower the prices of soft drinks in recreational venues (i.e. pubs, bars, etc.)
Physical	Alter the design of glasses for alcoholic beverages in recreational settings (i.e. smaller volume, taller narrower glasses to avoid pouring in excess, etc.)
	Use crystal-free glasses (e.g. plastic) in recreational settings
	Alter music played in alcohol consumption environments (e.g. limit music volume)
Tobacco	
Regulatory	Age-related prohibition of tobacco products purchase/consumption
	Bans and restrictions on tobacco advertising and promotion
	Smoke-free indoor public and working premises
	Smoke-free school grounds and public playgrounds

	Prohibition to sell tobacco products in school proximity
	Prohibition to sell tobacco products in workplaces
	Smoke-free private vehicles carrying passengers less than 18 years old
	Licensing system for retailers of tobacco products
	Bans to display tobacco products at the point-of-sale in retail stores
	Prohibition of cigarettes and hand-rolled tobacco with characteristic odour and flavour
	Standardised packaging for tobacco products
	Plain packaging for tobacco products
Economic	Increase the taxes on and prices of tobacco products
Physical	Removal of cigarette machines from public spaces
Common to illicit drugs, alcohol and tobacco	
Physical	Longer opening hours of drug-free youth establishments (youth clubs, sport clubs, art clubs, etc.)
	Good availability of night public transport and taxis
	Good lighting in public spaces
	CCTV (closed-circuit television) in public areas
	Police presence at places and times where the risk of violent crime in public environments is high due to high drug or alcohol consumption
	Cleaning up neighbourhoods to remove drug dealers

Availability of each measure was calculated as the proportion of participants who identified the measure as existing at either local or national level out of all those who gave an answer for that specific measure. An overall 'average availability' at the European level for each broad type of measure (regulatory, economic or physical) was calculated for each domain of substance use by aggregating the proportions reporting availability for each individual measure of the same type and substance use domain, and calculating the mean. Although based on expert opinion and differential coverage across countries, this will still give an indication of the general availability of different intervention types. In the analysis below, to describe apparent level of availability, proportions of positive responses of 90 % or more were classified as full or nearly full availability, proportions between 60 % and 89 % as moderate availability, and proportions below 60 % as sporadic availability.

For the analysis of level of enforcement (for regulatory and economic measures) or provision (for physical measures), only those respondents who identified the measure as available were included in the analysis. Respondents were asked to rate enforcement as strong, moderate or weak, and level of provision (or extent of implementation) as full, moderate or limited. However, in this analysis only the proportion who considered that a measure had strong enforcement or full provision is reported.

The nature of the survey and response rate means that it is not a representative sample survey across different European countries. For this reason, it is not possible to make reliable comparisons across countries. Therefore, in the presentation of results, only the aggregate European figure for responders is discussed. This aggregate result may also be affected by the differing response rate and the distribution of responses across countries (see later discussion of strengths and limitations of the study). Maps showing country-level responses are presented in Appendix C, but these are just to illustrate broad differences in provision or enforcement of different environmental prevention measures and comparisons

between individual countries are not appropriate.

Environmental prevention measures: availability and enforcement

At the European level, the survey results show that, across 11 regulatory environmental prevention measures for illicit drugs, on average 83 % of respondents reported national-level availability and a further 5 % indicated local availability (Table 3). For alcohol, across 15 regulatory or economic measures, the average proportion reporting national availability was 52 %, and for tobacco (13 regulatory or economic measures) the average for national availability was 60 %. In contrast, for the six physical environmental prevention measures that can affect all three substances — illicit drugs, alcohol and tobacco — on average just 19 % of respondents reported national availability. However, these physical measures were more likely to be reported as available at a local rather than national level — on average 56 % of respondents reported that these prevention measures were available at the local level (Table 3).

Table 3. Overall average availability in Europe by type of measure and by topic

Type of measure	Overall average availability (%)		
	National level	Local level	National or local ⁽¹⁾
Illicit drugs			
Regulatory measures (11 measures)	83.1	4.8	87.9
Alcohol			
Regulatory measures (13 measures)	53.9	18.6	72.5
Economic measures (2 measures)	39.7	8.8	48.5
Regulatory or economic (15 measures)	52.0	17.2	69.3
Specific physical measures (3 measures)	1.9	5.2	35.7
Tobacco			
Regulatory measures (12 measures)	57.9	2.9	60.8
Economic measures (1 measure)	86.0	0.0	86.0
Regulatory or economic (13 measures)	60.0	2.7	62.7
Specific physical measures (1 measure)	47.2	8.3	55.6
Illicit drugs, tobacco and alcohol prevention			
Common physical measures (6 measures)	18.9	56.3	75.2

⁽¹⁾ May not be exact sum of national- and local-level proportions owing to rounding.

For regulatory and economic measures that were reported to be available, the proportion of respondents who reported that there was strong enforcement of these measures varied between 33 % (alcohol), 41 % (illicit drugs) and 54 % (tobacco) (Table 4). In the case of physical measures, respondents assessed whether these were ‘fully’ provided (rather than strongly enforced), and the proportion reporting this varied from 15 % or 16 % for alcohol or common measures to 75 % for tobacco (Table 4).

Table 4. Overall average of the proportion reporting strong enforcement or full provision of environmental prevention measures by topic (respondents who indicated that the measures existed in their country only)

	Strong enforcement (regulatory, economic measures)	Full provision (physical measures)
Illicit drugs	41.4 %	-
Alcohol	32.9 %	16.3 %
Tobacco	53.5 %	75.0 %
Illicit drugs, tobacco and alcohol — common physical measures		15.3 %

In the remainder of this section, for each topic in turn, the distribution of responses relating to the availability of regulatory or economic environmental measures and the level of enforcement of those measures, and then the availability of physical environmental measures and their level of provision among the whole sample, are presented. At the end of each section, other environmental measures described by the participants are listed.

Illicit drugs

Among the 117 participants in the study, 79 (68 %) provided information on illicit drug environmental prevention measures, and the distribution of respondents by country is presented in Table 1, above. A total of 24 European countries were represented among participants answering questions on environmental prevention measures targeting illicit drugs. In half of the cases there were only one or two participants per country.

All the regulatory measures ($n = 11$) presented in the survey were identified as available in all countries for which there were respondents. As would be expected, the great majority (over 90 %) of respondents reported availability of the majority of measures (7 out of 11), namely prohibition of use/selling of drugs other than alcohol and tobacco (in general and in particular settings: school, workplace, nightlife venues) and driving under the influence of illicit substances (Table 5).

Among these measures, prohibition of selling (in general and in particular places: school, workplaces) and driving under the influence of illicit drugs were also identified as being strongly enforced by more than half of the respondents (Table 5).

Three of the regulatory environmental measures — bans on legal highs, prohibition of use of illicit drugs in nightlife venues and decriminalisation of some substances — were less widely reported to be available. In addition, only a minority of the respondents considered enforcement of these measures to be strong. The regulatory measure that respondents were least likely to say was available was the regulation of places that trade in illicit psychoactive substances. However, when available, this measure was considered to be strongly enforced by almost half of respondents (Table 5).

Table 5. Perceived availability and strength of enforcement of regulatory environmental preventive measures for illicit drugs: (a) frequency of reporting availability locally or nationally; and (b) if measure is available, the frequency of reporting of strong enforcement

Description of measure	(a) Measure is available	(b) Where available, strong enforcement
	No (%)	No (%) ⁽¹⁾
Prohibition of drugs other than alcohol or tobacco (aimed at users)	75 (95)	23 (31)
Prohibition of drugs other than alcohol or tobacco (aimed at dealers)	77 (97)	51 (66)
Bans and restrictions on ‘legal highs’ (new psychoactive substances)	60 (76)	22 (37)
Decriminalisation of some substances	58 (73)	18 (31)
Regulation of places that trade in psychoactive substances (other than alcohol or tobacco)	46 (58)	21 (46)
Driving under the influence of illicit substances: laws and sanctions	78 (99)	45 (58)
Prohibition to sell illicit drugs in close proximity to schools	76 (96)	41 (54)
Prohibition to use illicit drugs in work settings	73 (92)	21 (29)
Prohibition to sell illicit drugs in work settings	75 (95)	39 (52)
Prohibition to use illicit drugs in nightlife settings	69 (87)	14 (20)
Prohibition to sell illicit drugs in nightlife settings	77 (97)	24 (31)

⁽¹⁾ Percentage based on the number reporting that the measure is available (shown in column (a)).

A comparison of the availability and enforcement of different environmental measures for illicit drug use prevention across Europe is presented in Appendix C, Figure C.1. Table 6 presents two additional environmental measures for illicit drug use prevention suggested by participants.

Table 6. Additional environmental measures reported by participants

Country	Measure	Availability	Enforcement
Croatia	Prohibition of children younger than 16 being outside without a parent or another trusted adult between 11 p.m. and 5 a.m.	National level	Moderate
Spain	Prohibition of social cannabis clubs	Local level	Weak

Alcohol

Among the 117 study participants, 97 (83 %) answered the questions relating to alcohol. The distribution of answers by country is presented in Table 1. Respondents from a total of 26 European countries assessed environmental prevention measures relating to alcohol use in their country. In the majority of the cases, there were between one and four participants per country.

All the regulatory or economic measures presented ($n = 15$) were reported as being available in Europe. Only two measures were reported as having full or almost full availability (that is, reported by over 90 % of respondents): age-related prohibition of alcohol purchase and drink driving legislation. Drink driving legislation was reported as having strong enforcement by more than half of the participants, while strong enforcement of age-related prohibition was reported by less than one-third of respondents.

The majority (9 out of 15) of the regulatory or economic environmental measures for alcohol prevention (for example those concerning; advertising, hours and location of distribution, serving of intoxicated patrons, licensing system for retailers, use/selling in schools and workplaces, increased taxes) had moderate availability (reported by 60–89 % of respondents). The measures with moderate availability that were classified as having strong enforcement by a majority of respondents were the licensing system for retailers of alcoholic beverages and prohibition of use/selling of alcoholic beverages in school or in close proximity of schools (Table 7).

Table 7. Perceived availability and strength of enforcement of regulatory or economic environmental preventive measures for alcohol: (a) frequency of reporting availability locally or nationally; and (b) if measure is available, the frequency of reporting of strong enforcement

Description of measure	(a) Measure is available	(b) Where available, strong enforcement
	No (%)	No (%) ⁽¹⁾
Age-related prohibition of alcohol purchase/consumption	95 (98)	27 (28)
Bans and restrictions on alcohol advertising and promotion	84 (87)	20 (24)
Control/restriction of production, retail sale (hours, location) and distribution of alcoholic beverages	77 (79)	24 (31)
Licensing system for retailers of alcoholic beverages	74 (76)	39 (53)
Drink driving legislation (maximum blood concentration)	95 (98)	61 (64)
Prohibition to sell alcoholic beverages to intoxicated/impaired patrons	67 (69)	4 (6)
Mandatory alcohol training for bar staff (servers, waiters)	31 (32)	6 (19)
Bans on the display of alcoholic beverages at the point-of-sale in retail stores	28 (29)	6 (21)
Limitation of alcoholic beverages at major public events	57 (59)	9 (16)
Prohibition to use alcoholic beverages in school premises or grounds	85 (88)	45 (53)
Prohibition to sell alcoholic beverages in school premises or grounds	86 (89)	59 (69)
Prohibition to use alcoholic beverages in workplaces	71 (73)	21 (30)
Prohibition to sell alcoholic beverages in workplaces	64 (66)	23 (36)
Increase the taxes and prices of alcoholic beverages	63 (65)	24 (38)

Lower the prices of soft drinks in recreational venues (i.e. pubs, bars, etc.) 31 (32) 2 (6)

(¹) Percentage based on the number reporting that the measure is available (shown in column (a)).

The regulatory measures with apparently sporadic availability (reported by less than 60 % of respondents) were alcohol training for bar staff, the display of alcoholic beverages at the point of sale in retail stores, limitation of alcoholic beverages at public events, and pricing of alcoholic drinks and soft drinks. All regulatory or economic measures with this lower availability were considered to be strongly enforced by only a minority of respondents.

Compared with regulatory or economic environmental measures, physical measures were less widespread, with only sporadic availability reported for the three measures presented. Around half of respondents were aware of the provision of crystal-free glasses and one third identified altering the music played in alcohol consumption environments as an available measure. Only a small minority reported that measures to alter the design of glasses were available (Table 8).

Table 8. Perceived availability and level of provision of physical environmental measures: (a) frequency of reporting availability locally or nationally; and (b) if measure is available, the frequency of reporting of full provision

Measure	(a) Measure is available	(b) Where available, full provision
	No (%)	No (%) (¹)
Alcohol		
Alter the design of glasses for alcoholic beverages in recreational settings (i.e. smaller volume, taller, narrower glasses to avoid pouring in excess, etc.)	15 (15)	3 (20)
Use crystal-free glasses (e.g. plastic) in recreational settings	53 (55)	12 (23)
Alter music played in alcohol consumption environments (e.g. limit music volume)	36 (37)	2 (6)
Tobacco		
Removal of cigarette machines from public spaces	40 (56)	30 (75)
Illicit drugs, alcohol and tobacco		
Longer opening hours of drug-free youth establishments (youth clubs, sports clubs, art clubs, etc.)	44 (41)	4 (9)
Good availability of night-time public transport and taxis	94 (87)	12 (13)
Good lighting in public spaces	90 (83)	18 (20)
CCTV (closed-circuit television) in public areas	80 (74)	8 (10)
Police presence at places and times where there is an increased risk of violent crime in public environments due to high drug or alcohol consumption	100 (93)	26 (26)
Cleaning up neighbourhoods to remove drug dealers	79 (73)	11 (14)

(¹) Percentage based on the number reporting that the measure is available (shown in column (a)).

Furthermore, where the measures did exist, full provision was limited, being reported, in the case of measures related to the design of glasses, by about one in five respondents and, in the case of reduced music volume, by only around 1 in 20 respondents (Table 8).

A geographical comparison of the availability and enforcement of environmental measures for alcohol prevention is presented in Appendix C, Figure C.2.

Additional environmental prevention measures suggested by the respondents are shown in Table 9.

Table 9. Additional (a) regulatory or economic and (b) physical environmental prevention measures for alcohol reported by participants

Country	Measure	Availability (level)	Enforcement
Regulatory and economic measures			
Belgium	Prohibition of distributing alcoholic beverages or offering them free of charge or at a nominal price, specifically to minors, or of organising tastings intended specifically for minors	Local	Weak
Lithuania	Prohibition of selling alcoholic beverages in petrol stations	National	Strong
Spain	Training of bouncers	Local	Moderate
Physical prevention measures			
Belgium	Alcohol vending machines must be equipped with an ID card reader to verify age	National	Moderate
Lithuania	Possibility of installing alcolocks in cars	National	Limited
Lithuania	Prohibition of selling beer, fermented beverages or alcoholic cocktails with an alcoholic strength of more than 7.5 %, packaged in more than 0.5-l containers, unless these drinks are poured into a glass, ceramic, wood or metal container	National	Full
Netherlands	Changing design of situations (streets/squares) in night-time economy (light, hosts, transport)	Local	Moderate

Tobacco

Among the 117 participants who filled in the survey, 72 (62 %) provided information on tobacco environmental prevention measures, and the distribution of respondents by country is shown in Table 1, above. A total of 26 European countries have tobacco environmental prevention measures in place. In the majority of cases, there were one or two respondents per country.

Overall, each regulatory or economic measure ($n = 13$) presented in the survey was identified as being available in Europe (Table 10). Only a minority of the measures (3 out of 13) were reported to have full or almost full availability: age-related prohibition of purchase/consumption, restrictions on advertising and promotion, and smoke-free public and working premises. The measures concerning advertising and smoke-free environments

were classified as being strongly enforced by the majority of respondents, while for age-related prohibition less than half the respondents considered the measure to be strongly enforced.

Measures with moderate availability (3 out of 13) concerned smoke-free school grounds and playgrounds, licensing systems and increased taxes on and price of tobacco products. The first two measures were reported as being strongly enforced by more than half the respondents, with more than one third reporting strong enforcement of the last measure.

The majority of tobacco environmental prevention measures presented in the survey (7 out of 13) were reported as being generally limited in availability. These measures concerned tobacco package design, prohibitions on sales within schools/workplaces or of flavoured tobacco products, display of tobacco products at point of sale and smoke-free vehicles. Despite their availability being limited, when available, four out of the seven measures were identified as strongly enforced by more than half the respondents and three out of seven by more than one third of respondents (Table 10).

Table 10. Perceived availability and strength of enforcement of regulatory or economic environmental prevention measures for tobacco: (a) frequency of reporting availability locally or nationally; and (b) if measure is available, the frequency of reporting of strong enforcement

Measure	(a) Measure is available	(b) Where available, strong enforcement
	No (%)	No (%) ⁽¹⁾
Age-related prohibition of tobacco products purchase/consumption	70 (97)	30 (43)
Bans and restrictions on tobacco advertising and promotion	70 (97)	49 (70)
Smoke-free indoor public and working premises	69 (96)	43 (62)
Smoke-free school grounds and public playgrounds	64 (89)	35 (55)
Prohibition to sell tobacco products in proximity to schools	31 (43)	17 (55)
Prohibition to sell tobacco products in workplaces	40 (56)	28 (70)
Smoke-free private vehicles carrying passengers less than 18 years old	24 (33)	9 (37)
Licensing system for retailers of tobacco products	48 (67)	27 (56)
Bans on displaying tobacco products at the point-of-sale in retail stores	31 (43)	12 (39)
Prohibition of cigarettes and hand-rolled tobacco with characteristic odour and flavour	20 (28)	11 (55)
Standardised packaging for tobacco products	42 (58)	28 (67)
Plain packaging for tobacco products	16 (22)	7 (44)
Increased taxes and price of tobacco products	62 (86)	27 (43)

⁽¹⁾ Percentage based on the number reporting that the measure is available (shown in column (a)).

The survey presented one physical environmental prevention measure for tobacco

prevention, ‘removal of cigarette machines from public spaces’. This was reported as having sporadic availability, with just over half of respondents reporting it as an available measure in their country. When available, however, full provision was identified by the majority of participants (see Table 8, above).

A geographical comparison of the availability and enforcement of environmental measures for tobacco prevention is presented in Appendix C, Figure C.3.

The additional environmental prevention measures in the tobacco domain reported by survey participants are shown in Table 11.

Table 11. Additional environmental prevention measures for tobacco reported by participants

Country	Measure	Availability (level)	Enforcement
Spain	Smoke-limited terraces of bars and restaurants	National	Weak
	Controlled access to cigarette machines in bars and restaurants	National	Moderate

Common physical environmental preventive measures for illicit drugs, alcohol and tobacco

Among the 117 participants, 108 (92.3 %) provided information on substance use environmental prevention measures that may have an impact on all three types of substances. The distribution of respondents by country is presented in Table 1. At least one respondent from each of the 27 countries was represented in the survey, and the majority of countries (17 countries) provided three or more respondents.

All six of the physical environmental prevention measures presented in the questionnaire were reported to be available in Europe. Availability of one measure was full or almost full (police presence in public spaces). Availability of the majority of the common physical environmental measures (four out of six: (availability of night-time public transport, lighting and CCTV, and cleaning up neighbourhoods to remove drug dealers) was reported to be moderate. Availability of the other measure (longer opening hours of drug-free youth establishments) was reported to be only limited (see Table 8).

Generally, for all these physical measures, only a small minority of respondents classed the level of provision as full. The measure most likely to have full provision was ‘police presence at places and times when the risk of violent crimes is high’, although even this measure was identified as such by only one quarter of respondents (see Table 8).

A geographical comparison of the availability and enforcement of physical environmental measures for illicit drugs, alcohol and tobacco prevention is presented in Appendix C, Figure C.4.

3. Environmental prevention in Europe — an emerging picture

The current situation in Europe

The current mapping exercise provides an overview of experts' awareness of the availability of environmental prevention interventions in the areas of illicit drugs, alcohol and tobacco in Europe and their perception of the level of enforcement and provision of these measures. Of the 49 measures presented to the experts within the survey questionnaire, 39 were regulatory or economic environmental prevention measures and 10 were physical environmental prevention measures.

Regulatory and economic measures were identified as available more often than the physical environmental measures. The different measures included in the survey (shown in Table 2) were based on available information from the scientific literature, and the lower number of physical environmental prevention measures reflected the scarcity of documented use of these interventions in the field of substance use. This may be because reshaping physical environments is viewed as having a higher financial cost than modifying a regulation, a tax or a price structure by decree. It may also reflect the fact that the use of measures based on choice architecture (subtly changing cues, opportunities and incentives) as a behavioural change strategy is generally less well known, both among decision-makers (resulting in such measures being used less often) and among the survey participants (resulting in these measures being reported less often).

Additionally, physical measures (often including choice architecture) might be less identifiable for the respondents because they are less visible or because they tend to occur at a more local level and in specific locations, such as clubs, festivals and nightlife zones. A prevention expert may therefore be more likely to be aware of the existence of pricing, taxation laws, advertisements or smoking bans and their degree of reinforcement, since these measures tend to be enforced by national or regional regulations. In order to provide the same level of information about physical measures, respondents would need to have knowledge of local environments, unless there are licensing rules at the national level that require such measures. This is particularly true for those physical environmental interventions that are not substance specific; these common physical measures were more likely to be identified as available at a local level whereas other interventions were more likely to be identified at a national level (Table 3).

In terms of differences between the different substances, regulatory measures relating to illicit drugs were identified more often than those relating to other substances as having full or almost full availability. Measures to control alcohol and tobacco use were mainly identified as being moderately or sporadically available. The greater availability of measures to control illicit drugs was expected as these substances are predominantly dealt with under a prohibition framework that puts possession for use or sale, production and transport of these substances under strict control, although it should be noted that the list of measures also included decriminalisation of some substances and two items relating to regulation of legal highs. Indeed, the only measures presented in the survey for illicit drugs were regulatory measures, demonstrating that prohibition limits opportunities for environmental prevention. The results show that, across 11 measures for illicit drugs, on average 83 % of respondents reported national-level availability. For alcohol, across 15 regulatory or

economic measures, the average availability was 52 %, and for tobacco (13 regulatory or economic measures) the average availability was 60 %. In contrast, for illicit drugs, alcohol and tobacco, across six common physical environmental prevention measures, on average, just 19 % of respondents reported national availability, though these physical measures were more likely to be reported as available at a local rather than a national level — on average 56 % of respondents, across six physical environmental prevention measures. (Table 3)

For alcohol and tobacco, lower proportions of respondents reported availability of regulatory measures, and so they were mainly classed as having moderate or sporadic availability. This corroborates findings from other large studies (Joossens and Raw, 2014; Lindemann et al., 2015) that have observed suboptimal control and regulation of alcohol and tobacco in a number of European countries. Generally, strong enforcement of regulatory and economic measures was reported to be quite limited, especially for illicit drugs and alcohol. For tobacco, however, enforcement was deemed strong by the majority of respondents who identified the regulatory and economic measures as being in place. This finding might reflect the higher visibility of anti-smoking reinforcements in public areas. For example, it is easier to observe whether or not smoking is banned than whether or not alcohol is sold to minors.

Owing to variable coverage across countries, geographical comparisons must be undertaken with caution, although there appeared to be regional differences in the implementation of regulatory and economic measures. While the availability of measures appears similar for many measures across regions, participants from northern and western Europe were more likely to report strong enforcement of certain measures, such as age restrictions, advertising restrictions and smoke-free indoor spaces, than participants from southern and eastern regions. Participants from northern Europe were more likely to report strong enforcement of higher taxation and higher prices for alcohol and tobacco than other regions. These regional differences are similar to the distribution of ratings in the Tobacco Control Scale (Joossens and Raw, 2014) and Alcohol Control Scores (Lindemann et al., 2015).

We have discussed limited availability of some measures, and often poor enforcement, which may be partly due to the barriers to implementation identified in the previous section. There is evidence, however, that some environmental prevention measures are gaining acceptability. Studies have found a greater acceptance of measures that use choice architecture (Diepeveen et al., 2013; Hollands et al., 2013; Pechey et al., 2014; Petrescu et al., 2016) to alter the (less visible or less perceived) patterns of incentives, obstacles and opportunities within the environment that strongly influence behaviour. For example, changing the size and shape of glasses, the comparative price of non-alcoholic alternatives, the affordances⁽⁴⁾ of behaviour (light, noise, density of crowd, dirt) in nightlife settings, or the tidiness, liveliness and security of streets and neighbourhoods (Foxcroft, 2013; Hill et al., 2017).

⁽⁴⁾ A term from psychology meaning a property of an object or an aspect of the environment, which can be inferred from visual or other perceptual signals.

Strengths and limitations of the study

This analysis is the first attempt to provide an operational definition of environmental prevention and an overview of its availability at the European level. Therefore, it represents a useful starting point for future research regarding the extent to which environmental prevention interventions are used in Europe. By collecting information using the classification of regulatory, economic and physical, we have been able to identify differences between the availability and implementation of different types of environmental prevention measures. This can help to understand where the gaps in provision are and to explore the reasons for this, identifying barriers to implementation.

However, there is overlap between the three categories; for example, standardised packaging of tobacco products is a regulatory measure but is physical in nature. Further refinement of the categorisation of environmental prevention measures is ongoing, with a recent paper suggesting a more granular categorisation system for environmental interventions aimed at changing behaviour (Hollands et al., 2017).

By targeting key networks, it was possible to identify experts who were able to provide valuable insight about environmental prevention measures in their country while self-selection ensured commitment to the survey. More than 70 % of the respondents had over 10 years of experience in the prevention field.

The sampling procedure, however, limits the generalisability of the survey as the survey participants were not representative and the comprehensiveness of expert knowledge cannot be guaranteed. It needs to be highlighted that availability in the context of the current study represents respondents' (experts') awareness of the availability of a specific measure in their country rather than a concrete measure of availability. Similarly, enforcement and provision represent respondents' perception of the level of enforcement or provision of a specific measure in their setting.

Additional strengths of this analysis are that it distinguishes between availability and enforcement (the tobacco and alcohol policy scales that focused on the level of control do not), and between national- and local-level availability. The alcohol and tobacco scales are substance use policy metrics that focus on regulatory or economic strategies at the macro-level. This study aimed to examine wider measures by including local-level strategies, for example those targeting the physical environment.

The results apply only to the 27 countries in which at least one person answered the survey, rather than to Europe as a whole. If all European countries had participated, the rating of overall availability for many of the measures might be different. Additionally, the high response from Spain may have affected the results, although we explored the impact of this by carrying out an analysis of the differences between Spain and the other countries. The analysis showed that the markedly higher number of respondents from Spain might have impacted on the aggregate results for availability of only 4 out of 49 measures at the European level. Two measures (decriminalisation of some substances and longer opening hours of drug-free youth establishments) appeared to have higher availability in Spain than in the other countries, and two measures (bans and restrictions on legal highs and prohibition of selling alcoholic beverages to intoxicated patrons) had apparently lower of availability in Spain.

Another caveat of this analysis is that it is based on a limited number of observations. It is reasonable to assume that countries in Europe are quite different regarding the availability of the environmental prevention measures and that, in countries where the policymaking process is more decentralised, the situation can vary significantly at the local level. This variability within Europe, and the consensus regarding existence/non-existence of the measures at the national level within each country, could not be studied owing to the opportunistic sampling technique and the relatively low number of responses by country.

Conclusion

This conceptual framework and mapping exercise provides a useful, albeit limited, first look at environmental prevention measures for Europe, indicating mixed availability and limited implementation and enforcement, especially for illicit drugs and alcohol. Future work should build on this initial survey to provide a more comprehensive picture of change in the availability/implementation of environmental prevention measures in European countries over the next 30 years. This trajectory for prevention policy and practice is in line with current calls to redirect the efforts of public health with a greater focus on marginal gains through environmental interventions, which rely on automatic processes that require very little or no effort.

While currently environmental prevention approaches are not as well known as traditional forms of prevention, environments are likely to become more risky with, for example, the increased availability of cannabis, new psychoactive substances, virtual social networks and internet connectivity. In these circumstances, environmental interventions are likely to be needed in addition to developmental (i.e. skills-based) interventions in order to sustain protective behaviour. Such interventions impact behaviour differently and create complementary ways of achieving positive socialisation.

References

- Adams, J., Mytton, O., White, M. and Monsivais, P. (2016), 'Why are some population interventions for diet and obesity more equitable and effective than others? The role of individual agency', *PLOS Medicine* 13(4), e1001990. Retrieved from <https://doi.org/10.1371/journal.pmed.1001990>
- Almeida, S. R., Lourenço, J. S., Dessart, F. J. and Ciriolo, E. (2016), *Insights from behavioural sciences to prevent and combat violence against women*. Publications Office of the European Union, Luxembourg. <https://doi.org/10.2788/412325>
- Babor, T. F., Caulkins, J. P., Edwards, G., Fischer, B., Foxcroft, D. R., Humphreys, K., Obot, I. S., et al. (2017), *Drugs Policy and Public Good* (2nd edn), Oxford University Press, Oxford.
- Baum, F. and Fisher, M. (2014), 'Why behavioural health promotion endures despite its failure to reduce health inequities', *Sociology of Health & Illness* 36 (2), pp. 213-225. Retrieved from <https://doi.org/10.1111/1467-9566.12112>
- Berkowitz, A. D. (2002), 'The social norms approach: theory, research, and annotated bibliography', *Social Norms Theory and Research* (August), 1-47. Retrieved from www.alanberkowitz.com
- Bermaoui, J., Marten, C., Ostner, I., Sembritzki, T. and Stolberg, C. (2012), *Parenting programmes in Germany — an overview*, PolChi Working Paper No. 12/2, Goettingen. Retrieved from www.parentingresearch.eu
- Bernier, A., Carlson, S. M. and Whipple, N. (2010), 'From external regulation to self-regulation: Early parenting precursors of young children's executive functioning', *Child Development* 81 (1), pp. 326-339. Retrieved from <https://doi.org/10.1111/j.1467-8624.2009.01397.x>
- Brown, T., Platt, S. and Amos, A. (2014), 'Equity impact of population-level interventions and policies to reduce smoking in adults: a systematic review' *Drug and Alcohol Dependence* 1 (138) pp. 7-16. Retrieved from <https://doi.org/10.1016/j.drugalcdep.2014.03.001>
- Buckner, J. D. (2013), 'College cannabis use: the unique roles of social norms, motives, and expectancies', *Journal of Studies on Alcohol and Drugs* 74 (5), pp. 720-726. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/23948531>
- Bühler, A. and Thrul, J. (2015), *Prevention of addictive behaviours. Updated and extended version of prevention of substance abuse*. Publications Office of the European Union, Luxembourg. Retrieved from <https://doi.org/10.2810/742866>
- Burkhart, G. (2011), 'Environmental drug prevention in the EU. Why is it so unpopular?', *Adicciones* 23 (2), pp. 87-100. Retrieved from <http://www.redalyc.org/articulo.oa?id=289122828011>
- Burton, R., Henn, C., Lavoie, D., O'Connor, R., Perkins, C., Sweeney, K., Greaves, F., et al. (2017), 'A rapid evidence review of the effectiveness and cost-effectiveness of alcohol control policies: an English perspective', *The Lancet* 389 (10078), pp. 1558-1580.

Retrieved from [https://doi.org/10.1016/S0140-6736\(16\)32420-5](https://doi.org/10.1016/S0140-6736(16)32420-5)

- Cousijn, J., Watson, P., Koenders, L., Vingerhoets, W. A. M., Goudriaan, A. E. and Wiers, R. W. (2013), 'Cannabis dependence, cognitive control and attentional bias for cannabis words' *Addictive Behaviours* 38 (12), pp. 2825-2832.
- Cuevas, K., Deater-Deckard, K., Kim-Spoon, J., Wang, Z., Morasch, K. C. and Bell, M. A. (2014), 'A longitudinal intergenerational analysis of executive functions during early childhood', *British Journal of Developmental Psychology* 32 (1), pp. 50-64. Retrieved from <https://doi.org/10.1111/bjdp.12021>
- Dermota, P., Wang, J., Dey, M., Gmel, G., Studer, J. and Mohler-Kuo, M. (2013), 'Health literacy and substance use in young Swiss men', *International Journal of Public Health* 58 (6), pp. 939-948. Retrieved from <https://doi.org/10.1007/s00038-013-0487-9>
- Dewey, J. (1938), 'Experience and Education', *Education* 50(3), p. 96.
- Diepeveen, S., Ling, T., Suhrcke, M., Roland, M. and Marteau, T. M. (2013), 'Public acceptability of government intervention to change health-related behaviours: a systematic review and narrative synthesis', *BMC Public Health* 13 (1), pp. 756. Retrieved from <https://doi.org/10.1186/1471-2458-13-756>
- Dieterich, S. E., Stanley, L. R., Swaim, R. C. and Beauvais, F. (2013), 'Outcome expectancies, descriptive norms, and alcohol use: American Indian and white adolescents', *The Journal of Primary Prevention*. Retrieved from <https://doi.org/10.1007/s10935-013-0311-6>
- Ecker, A. H. and Buckner, J. D. (2014), 'Cannabis use behaviors and social anxiety: the roles of perceived descriptive and injunctive social norms', *Journal of Studies on Alcohol and Drugs* 75 (1), pp. 74-82. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/24411799>
- Eisenberg, M. E., Neumark-Sztainer, D. and Fulkerson, J. A. (2008), 'Family meals and substance use: is there a long-term protective association?', *Journal of Adolescent Health* 43 (2), pp. 151-156.
- Faggiano, F., Vigna-Taglianti, F. D., Versino, E., Zambon, A., Borraccino, A. and Lemma, P. (2008), 'School-based prevention for illicit drugs use: a systematic review', *Preventive Medicine* 46 (5), pp. 385-396.
- Festinger, L. (1957), *A theory of cognitive dissonance*, Stanford University Press.
- Fleming, K. A. and Bartholow, B. D. (2014), 'Alcohol cues, approach bias, and inhibitory control: applying a dual process model of addiction to alcohol sensitivity', *Psychology of Addictive Behaviors* 28 (1), pp. 85-96.
- Foxcroft, D. R. (2013), 'Can prevention classification be improved by considering the function of prevention?', *Prevention Science*. Retrieved from <https://doi.org/10.1007/s11121-013-0435-1>
- Foxcroft, D. R. (2014), "'Form ever follows function. This is the law". A prevention taxonomy based on a functional typology', *Adicciones* 26 (1), pp. 10-14. Retrieved from http://www.adicciones.es/files/Foxcroft_EDIT.pdf

- Foxcroft, D. R., Coombes, L., Wood, S., Allen, D., Almeida Santimano, N. M. L. and Moreira, M. T. (2016), 'Motivational interviewing for the prevention of alcohol misuse in young adults', *Cochrane Database of Systematic Reviews* 7, CD007025. Retrieved from <https://doi.org/10.1002/14651858.CD007025.pub4>
- Foxcroft, D. R., Moreira, M. T., Almeida Santimano, N. M. L. and Smith, L. A. (2015), 'Social norms information for alcohol misuse in university and college students', *Cochrane Database of Systematic Reviews* 1, CD006748. Retrieved from <https://doi.org/10.1002/14651858.CD006748.pub3>
- Foxcroft, D. R. and Tsertsvadze, A. (2011), 'Universal family-based prevention programs for alcohol misuse in young people', *Cochrane Database of Systematic Reviews*, (1469-1493X (Electronic)), CD009308.
- Franca, L. R., Dautzenberg, B., Falissard, B. and Michel, R. (2009), 'Are social norms associated with smoking in French university students? A survey report on smoking correlates', *Substance Abuse Treatment, Prevention and Policy*, 4 (1), pp. 4.
- Freisthler, B. and Gruenewald, P. J. (2014), 'Examining the relationship between the physical availability of medical marijuana and marijuana use across fifty California cities', *Drug and Alcohol Dependence* 143, pp. 244-250.
- Gigerenzer, G. (2014), 'How I got started: teaching physicians and judges risk literacy', *Applied Cognitive Psychology* 28 (4), pp. 612-614. Retrieved from <https://doi.org/10.1002/acp.2980>
- Gigerenzer, G. (2015), 'On the supposed evidence for libertarian paternalism', *Review of Philosophy and Psychology* 6 (3), pp. 361-383. Retrieved from <https://doi.org/10.1007/s13164-015-0248-1>
- Gmel, G., Holmes, J. and Studer, J. (2016), 'Are alcohol outlet densities strongly associated with alcohol-related outcomes? A critical review of recent evidence', *Drug and Alcohol Review* 35 (1). Retrieved from <https://doi.org/10.1111/dar.12304>
- Grant, J. E. and Chamberlain, S. R. (2014), 'Impulsive action and impulsive choice across substance and behavioral addictions: cause or consequence?', *Addictive Behaviors* 39 (11), pp. 1632-1639.
- Hausman, D. M. and Welch, B. (2010), 'Debate: To nudge or not to nudge', *Journal of Political Philosophy* 18 (1), pp. 123-136. Retrieved from <https://doi.org/10.1111/j.1467-9760.2009.00351.x>
- Hill, K. M., Pilling, M. and Foxcroft, D. R. (2017), 'Alcohol-related affordances and group subjectivities: a Q-methodology study', *Drugs: Education, Prevention and Policy* pp. 1-10. Retrieved from <https://doi.org/10.1080/09687637.2017.1284762>
- Hollands, G. J., Bignardi, G., Johnston, M., Kelly, M. P., Ogilvie, D., Petticrew, M., Shemilt, I., et al. (2017), 'The TIPPE intervention typology for changing environments to change behaviour', *Nature Human Behaviour* 1, pp. 140. Retrieved from <https://doi.org/10.1038/s41562-017-0140>
- Hollands, G. J., Marteau, T. M. and Fletcher, P. C. (2016), 'Non-conscious processes in

- changing health-related behaviour: a conceptual analysis and framework', *Health Psychology Review* pp. 1-14. Retrieved from <https://doi.org/10.1080/17437199.2015.1138093>
- Hollands, G. J., Shemilt, I., Marteau, T. M., Jebb, S. A., Kelly, M. P., Nakamura, R., Suhrcke, M. and Ogilvie, D. (2013), 'Altering micro-environments to change population health behaviour: towards an evidence base for choice architecture interventions', *BMC Public Health* 13 (1), pp. 1218. Retrieved from <https://doi.org/10.1186/1471-2458-13-1218>
- Hornik, R., Jacobsohn, L., Orwin, R., Piesse, A. and Kalton, G. (2008), 'Effects of the National Youth Anti-Drug Media Campaign on youths', *The American Journal of Public Health* 98 (12), pp. 2229-2236.
- Houben, K. and Wiers, R. (2008), 'Implicitly positive about alcohol? Implicit positive associations predict drinking behavior', *Addictive Behaviors* 33 (8), pp. 979-986.
- Joossens, L. and Raw, M. (2014), *The Tobacco Control Scale 2013 in Europe*, Association of European Cancer Leagues, Brussels. Retrieved from http://www.europeancancerleagues.org/images/TobaccoControl/TCS_2013_in_Europe_13-03-14_final_1.pdf
- Kahneman, D. and Frederick, S. (2005), 'A model of heuristic judgment', pp. 267-294, in *The Cambridge Handbook of Thinking and Reasoning* (Holyoak, K. and Morrison, R. (Eds.)), Cambridge Press, New York. Retrieved from https://mudarwan.files.wordpress.com/2015/09/the-cambridge-handbook-of-thinking-and-reasoning_2005.pdf
- Karlsson, T., Lindeman, M. and Österberg, E. (2012), 'Does alcohol policy make any difference? Scales and consumption', In: Anderson, P., Braddick, F., Reynolds, J. and Gual, A. (eds.) (2012), *Alcohol Policy in Europe: Evidence from AMPHORA*. 2nd ed, pp. 17-25. The AMPHORA project, ISBN: 978-84-695-7411-9. Retrieved from http://amphoraproject.net/w2box/data/e-book/AM_E-BOOK_2nd%20edition%20-%20final%20Sept%202013_c.pdf
- Katikireddi, S. V., Bond, L. and Hilton, S. (2014), 'Changing policy framing as a deliberate strategy for public health advocacy: a qualitative policy case study of minimum unit pricing of alcohol', *Milbank Quarterly* 92 (2). Retrieved from <https://doi.org/10.1111/1468-0009.12057>
- Kuntsche, E. N. and Kuendig, H. (2005), 'Do school surroundings matter? Alcohol outlet density, perception of adolescent drinking in public, and adolescent alcohol use', *Addictive Behaviors* 30 (1), pp. 151-158.
- Kuntz, B. and Lampert, T. (2016), 'Social disparities in parental smoking and young children's exposure to secondhand smoke at home: a time-trend analysis of repeated cross-sectional data from the German KiGGS study between 2003-2006 and 2009-2012', *BMC Public Health* 16 (1), pp. 485. Retrieved from <https://doi.org/10.1186/s12889-016-3175-x>
- Labhart, F., Anderson, K. G. and Kuntsche, E. (2017), 'The spirit is willing, but the flesh is weak: why young people drink more than intended on weekend nights — an event-

- level study', *Alcoholism: Clinical and Experimental Research*. Retrieved from <https://doi.org/10.1111/acer.13490>
- Lee, C. M., Geisner, I. M., Lewis, M. A. and Neighbors, C. and Larimer, M. E. (2007), 'Social motives and the interaction between descriptive and injunctive norms in college student drinking', *Journal of Studies on Alcohol and Drugs* 68 (5), pp. 714-721.
- Legleye, S., Khat, M., Mayet, A., Beck, F., Falissard, B., Chau, N. and Peretti-Watel, P. (2016), 'From cannabis initiation to daily use: educational inequalities in consumption behaviours over three generations in France', *Addiction* 111 (10), pp. 1856-1866. Retrieved from <https://doi.org/10.1111/add.13461>
- Lindemann, M., Karlsson, T. and Österberg, E. (2015), *Addiction and lifestyles in contemporary Europe: reframing Addictions Project (ALICE-RAP), policy scales, Deliverable 14.1, Work Package 14.1*. Retrieved from http://www.alicerap.eu/resources/documents/doc_download/226-deliverable-14-1-policy-scales.html
- Lipperman-Kreda, S., Mair, C., Grube, J. W., Friend, K. B., Jackson, P. and Watson, D. (2014), 'Density and proximity of tobacco outlets to homes and schools: relations with youth cigarette smoking', *Prevention Science* 15 (5), pp. 738-744.
- Lucassen, N., Kok, R., Bakermans-Kranenburg, M. J., Van Ijzendoorn, M. H., Jaddoe, V. W. V., Hofman, A., Verhulst, F. C., et al. (2015), 'Executive functions in early childhood: the role of maternal and paternal parenting practices', *British Journal of Developmental Psychology* 33 (4), pp. 489-505. Retrieved from <https://doi.org/10.1111/bjdp.12112>
- Mackenbach, J. P. (2014), 'The persistence of health inequalities in modern welfare states: the role of health behaviours', *Eurohealth* 20 (2), pp. 6-9.
- Michie, S., Wood, C. E., Johnston, M., Abraham, C., Francis, J. J. and Hardeman, W. (2015), 'Behaviour change techniques: the development and evaluation of a taxonomic method for reporting and describing behaviour change interventions (a suite of five studies involving consensus methods, randomised controlled trials and analysis of qualitative data)', *Health Technology Assessment* 19 (99), pp. 1-188. Retrieved from <https://doi.org/10.3310/hta19990>
- Nisbett, R. E. and Wilson, T. D. (1977), 'Telling more than we can know: verbal reports on mental processes', *Psychological Review* 84 (3), pp. 231-259.
- Ostafin, B. D., Kassman, K. T., de Jong, P. J. and van Hemel-Ruiter, M. E. (2014), 'Predicting dyscontrolled drinking with implicit and explicit measures of alcohol attitude', *Drug and Alcohol Dependence* 141, pp. 149-152.
- Pampel, F., Legleye, S., Goffette, C., Piontek, D., Kraus, L. and Khat, M. (2014), 'Cohort changes in educational disparities in smoking: France, Germany and the United States', *Social Science & Medicine* 127, pp. 41-50. Retrieved from <https://doi.org/10.1016/j.socscimed.2014.06.033>
- Passini, S. (2012), 'The delinquency-drug relationship: the influence of social reputation and moral disengagement', *Addictive Behaviors* 37 (4), pp. 577-579. Retrieved from <https://doi.org/10.1016/j.addbeh.2012.01.012>

- Pechey, R., Burge, P., Mentzakis, E., Suhrcke, M. and Marteau, T. M. (2014), 'Public acceptability of population-level interventions to reduce alcohol consumption: a discrete choice experiment', *Social Science & Medicine* 113, pp. 104-109. Retrieved from <https://doi.org/10.1016/j.socscimed.2014.05.010>
- Pennay, A. E. and Measham, F. C. (2016), 'The normalisation thesis — 20 years later', *Drugs: Education, Prevention and Policy* 23(3), pp. 187-189. Retrieved from <https://doi.org/10.3109/09687637.2016.1173649>
- Perkins, H. W. (1986), 'Perceiving the community norms of alcohol use among students: some research implications for campus alcohol education programming', *International Journal of the Addictions* 21 (9-10), pp. 961-976.
- Petrescu, D. C., Hollands, G. J., Couturier, D.-L., Ng, Y.-L. and Marteau, T. M. (2016), 'Public acceptability in the UK and USA of nudging to reduce obesity: the example of reducing sugar-sweetened beverages consumption', *PLOS ONE* 11 (6), e0155995. Retrieved from <https://doi.org/10.1371/journal.pone.0155995>
- Pischke, C. R., Zeeb, H., van Hal, G., Vriesacker, B., McAlaney, J., Bewick, B. M., Akvarder, Y., et al. (2012), 'A feasibility trial to examine the social norms approach for the prevention and reduction of licit and illicit drug use in European University and college students', *BMC Public Health* 12 (1), pp. 882. Retrieved from <https://doi.org/10.1186/1471-2458-12-882>
- Pokhrel, P., Herzog, T. A., Black, D. S., Zaman, A., Riggs, N. R. and Sussman, S. (2013), 'Adolescent neurocognitive development, self-regulation, and school-based drug use prevention', *Prevention Science* 14 (3), pp. 218-228. Retrieved from <https://doi.org/10.1007/s11121-012-0345-7>
- Quigley, M. (2013), 'Nudging for health: on public policy and designing choice architecture', *Medical Law Review* 21 (4), pp. 588-621. Retrieved from <https://doi.org/10.1093/medlaw/fwt022>
- Rimal, R. N. (2008), 'Modeling the relationship between descriptive norms and behaviors: a test and extension of the theory of normative social behavior (TNSB)', *Health Communication* 23 (2), pp. 103-116. Retrieved from <https://doi.org/10.1080/10410230801967791>
- Rooke, S. E., Hine, D. W. and Thorsteinsson, E. B. (2008), 'Implicit cognition and substance use: a meta-analysis', *Addictive Behaviors* 33 (10), pp. 1314-1328.
- Sniehotta, F. F., Araújo-Soares, V., Brown, J., Kelly, M. P., Michie, S. and West, R. (2017), 'Complex systems and individual-level approaches to population health: a false dichotomy?', *The Lancet Public Health* 2 (9), pp. e396-e397. Retrieved from [https://doi.org/10.1016/S2468-2667\(17\)30167-6](https://doi.org/10.1016/S2468-2667(17)30167-6)
- Stacy, A. W. and Wiers, R. W. (2010), 'Implicit cognition and addiction: a tool for explaining paradoxical behavior', *Annual Review of Clinical Psychology* 6, pp. 551-575. Retrieved from <https://doi.org/10.1146/annurev.clinpsy.121208.131444>
- Stockwell, T., Auld, M. C. C., Zhao, J. and Martin, G. (2012), 'Does minimum pricing reduce alcohol consumption? The experience of a Canadian province', *Addiction* 107 (5), pp.

- 912-920. Retrieved from <https://doi.org/10.1111/j.1360-0443.2011.03763.x>
- Strang, J., Babor, T., Caulkins, J., Fischer, B., Foxcroft, D. and Humphreys, K. (2012), 'Drug policy and the public good: evidence for effective interventions', *Lancet* 379 (9810), pp. 71-83. Retrieved from [https://doi.org/10.1016/S0140-6736\(11\)61674-7](https://doi.org/10.1016/S0140-6736(11)61674-7)
- Swinburn, B., Egger, G. and Raza, F. (1999), 'Dissecting obesogenic environments: the development and application of a framework for identifying and prioritizing environmental interventions for obesity', *Preventive Medicine* 29(6, part 1), pp. 563–570. Retrieved from <https://doi.org/10.1006/pmed.1999.0585>
- Szmigin, I., Bengry-Howell, A., Griffin, C., Hackley, C. and Mistral, W. (2011), 'Social marketing, individual responsibility and the "culture of intoxication"', *European Journal of Marketing* 45 (5), pp. 759-779.
- Thaler, R. H. and Sunstein, C. R. (2008), *Nudge: Improving decisions about health, wealth, and happiness* (2nd edn), New Haven, CT, Yale University Press.
- UNODC (2015), *International Standards on Drug Use Prevention*. United Nations, Vienna. Retrieved from https://www.unodc.org/documents/prevention/UNODC_2013_2015_international_standards_on_drug_use_prevention_E.pdf
- Vadrucci, S., Vigna-Taglianti, F. D., van der Kreeft, P., Vassara, M., Scatigna, M., Faggiano, F., Burkhart, G. (2015), 'The theoretical model of the school-based prevention programme Unplugged', *Global Health Promotion*. Retrieved from <https://doi.org/10.1177/1757975915579800>
- van Hemel-Ruiter, M. E., de Jong, P. J., Ostafin, B. D. and Wiers, R. W. (2014), 'Reward sensitivity, attentional bias, and executive control in early adolescent alcohol use', *Addictive Behaviors* 40C, pp. 84-90. Retrieved from <https://doi.org/10.1016/j.addbeh.2014.09.004>
- Watson, P., Wiers, R. W., Hommel, B. and de Wit, S. (2014), 'Working for food you don't desire. Cues interfere with goal-directed food-seeking', *Appetite* 79, pp. 139-148. Retrieved from <https://doi.org/10.1016/j.appet.2014.04.005>
- Williamson, L., Thom, B., Stimson, G. V. and Uhl, A. (2014), 'Stigma as a public health tool: Implications for health promotion and citizen involvement — A response to Bayer and Fairchild', *The International Journal on Drug Policy* 26 (7), pp. 615-616. Retrieved from <https://doi.org/10.1016/j.drugpo.2015.04.004>
- Yap, M. B. H., Reavley, N. J. and Jorm, A. F. (2012), 'Young people's beliefs about the harmfulness of alcohol, cannabis and tobacco for mental disorders: findings from two Australian national youth surveys', *Addiction* 107 (4), pp. 838-847. Retrieved from <https://doi.org/10.1111/j.1360-0443.2011.03732.x>
- Young, R., Macdonald, L. and Ellaway, A. (2013), 'Associations between proximity and density of local alcohol outlets and alcohol use among Scottish adolescents', *Health & Place* 19, pp. 124-130.

Appendices

Appendix A: Details of the methods and analytical approach

Data collection

The data were collected between 20 June and 28 September 2016 through a web-based questionnaire developed on the Qualtrics platform.

Existing information on environmental prevention is collected by the EMCDDA through designated public health entities in each country (the Reitox network of national focal points). This survey aimed to gather perspectives from prevention professionals working in academia, governmental and non-governmental institutions, and agencies that prevent and treat drug addiction. The online survey was, therefore, distributed to members who were on the email list of the following professional organisations: the European Society for Prevention Research (EUSPR), the EMCDDA, the European Institute of Studies on Prevention (IREFREA), the Science for Prevention Academic Network (SPAN), the Reitox network and the United Nations Office on Drugs and Crime. The members of those organisations opted in to the study by filling in the questionnaire (self-selecting sample).

In addition, a snowball technique was used for recruitment: respondents were asked to provide email addresses of colleagues who may be interested in answering the survey. Owing to a low number of initial responses, the data collection period was extended by 45 days and personal invitations were sent to experts from countries with no or very few participants. The link was also shared through social media (LinkedIn and Twitter). Two waves of reminder emails were sent during the study period.

The study considered any member of the professional networks listed above to be eligible for the study. The inclusion criteria were being located in Europe, being aware of environmental prevention measures and selecting an area of expertise. These were explicitly assessed at the beginning of the survey.

The questionnaire was accessed 278 times, with 168 subjects satisfying the inclusion criteria. The main reason for exclusion was not selecting an area of expertise. The survey asked questions on environmental prevention measures across a number of topics (illicit drugs, alcohol, tobacco, diet, physical activity, crime and violence, and mental health) but, owing to the profile of the networks through which the survey was distributed, most respondents answered for illicit drugs, alcohol and tobacco, with limited response for other topics. Among the 129 participants who filled in the questionnaire, 117 answered the substance use questions and made up the analytical sample described here (Figure A.1).

The 117 respondents came from 27 European countries (26 EMCDDA reporting countries and Switzerland) and were aware of substance use environmental prevention measures in the European country in which they work. Of these, 79 (67 %) participants filled in the illicit drugs topic, 97 (83 %) the alcohol topic and 72 (61 %) the tobacco topic, and 108 (92 %) answered questions about environmental prevention measures that are common to all substances.

Figure A.1. Participant flow chart: retention environmental prevention in Europe study

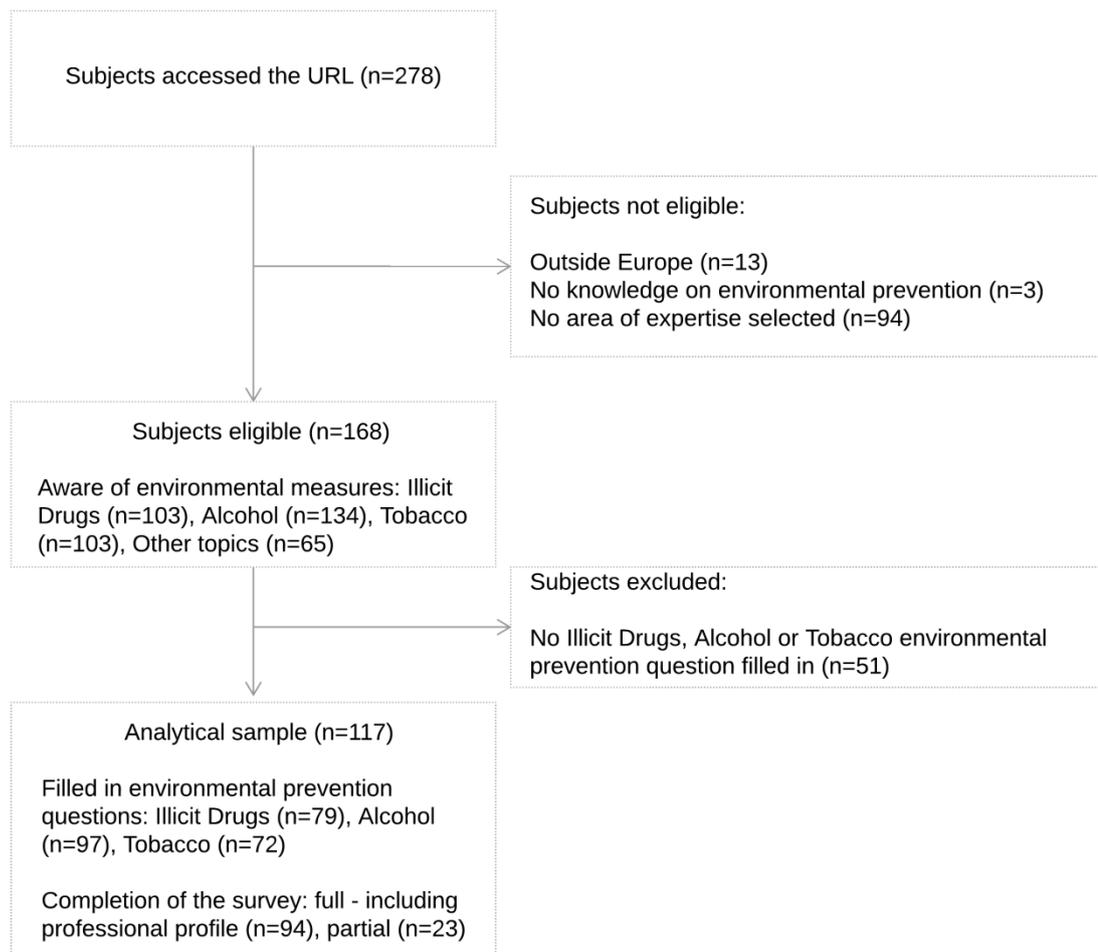


Table A.1 shows the characteristics of the respondents to the survey (a few people did not complete this section of the questionnaire). It can be seen that gender distribution is balanced; two thirds (65 %) of the respondents have more than 10 years of professional experience; the most common affiliations are academia (39 %) and health-related governmental structure (46 %); and the most common background is in psychology (36 %).

Table A.1. Baseline characteristics of participants who filled in the entire survey ($n = 94$)

Baseline characteristic	No (%)
Gender	
Male	46 (49)
Female	45 (48)
Not disclosed	3 (3)
Current field of professional activity	
Academia	37 (39)
Health-related governmental structure	43 (46)
Health-related non-governmental structure	18 (19)
Drug prevention/treatment agency	19 (20)
Social work	6 (6)
Other	7 (7)
Professional experience (years)	
≤ 1	1 (1)
2-5	18 (19)
6-10	14 (15)
11-15	19 (20)
16-20	12 (13)
> 20	30 (32)
Primary academic training	
Psychology	34 (36)
Sociology	17 (18)
Medical sciences	17 (18)
Public health	8 (8)
Other (biology, political sciences, geography, urban planning, etc.)	18 (18)

The survey

Structure

The material used for data collection was a purpose-designed three-part questionnaire developed by the European Society for Prevention Research (EUSPR). The first part contained information about the aim of the study and the definition and scope of

environmental prevention used in the study. Participants who declared they were aware of environmental prevention measures in their country were taken to the second part of the questionnaire, which addressed the content, availability and enforcement/provision of environmental prevention measures. This part consisted of an illustrative non-exhaustive list of measures grouped according to topic (illicit drugs, alcohol, tobacco, diet, physical activity, crime and violence, and mental health) and type (regulatory, economic and physical).

The examples of environmental prevention measures included in the survey were collected from several publications (Adams et al., 2016; Burkhart, 2011; Foxcroft, 2013; Hollands et al., 2013) suggested by advisors to the project. A list of the measures is shown in Table 2 and a list of the publications from which they were extracted is provided in Appendix D. The adequacy/relevance of the measures included in the final version of the questionnaire was checked independently by one junior and two senior researchers in the prevention field.

For each measure two close-ended questions were asked: one on availability and one on the perceived level of enforcement/provision (rating question). Respondents also had the opportunity to describe in more depth, through open-ended questions, the measures used in their countries regarding availability, mechanism of actions, publications and reports.

At the end of the second part, participants were invited to reflect on the potential of environmental prevention measures for use in cannabis regulation in Europe. The third part of the questionnaire contained questions regarding the professional profile of the respondents (years of experience, sector of activity, academic background).

Pilot survey

In addition to the authors, 10 experienced professionals active in the field of environmental prevention were consulted regarding the operational definition of environmental prevention used in the study. According to the feedback received and previous publications (Swinburn et al., 1999), the environmental prevention measures were categorised as regulatory, economic and physical.

Following this initial phase, six out of the nine invited public health professionals with experience and publications in the area of environmental prevention answered the pilot survey. Based on the input of those answering the pilot survey, changes to the structure and content of the questionnaire were made. The final version of the questionnaire is available in Appendix B.

Measures and data analysis

Availability

Availability for each measure was assessed with the question 'Check if this (measure) exists in your country or setting', with the following response options: 'Yes' if the answer was 'National' or 'Local' (overall availability), 'No' if the answer was 'None' and 'Unknown' if the answer was 'Unsure'. In the analysis of responses, the following labels were used to describe the overall availability of the environmental preventative measures: full or almost full availability (90 % or more of the respondents identified the measure as available at the local or national level), moderate availability (60 % to 89 % of the respondents identified the measure as available at the local or national level), sporadic or limited availability (59 % or less identified the measure as available at the local or national level), or no-one identified

the measure as available at the local or national level.

In the main analysis, the overall availability at the European level for each measure was calculated using individual responses.

Enforcement/provision

For enforcement/provision, only respondents who identified the measure as available were used to calculate the proportion of those who considered the measure had strong enforcement/full provision.

For the regulatory and economic measures identified as available, the level of enforcement was assessed with the question 'How well is this enforced by authorities?' and classified as 'Strong', 'Moderate' or 'Weak'. In the main analysis, the extent to which available measures were identified as being strongly enforced among those who reported the availability of the measure is presented.

For physical measures identified as available, the level of provision was assessed with the question 'How good is the provision or coverage in each setting?' and classified as 'Full', 'Moderate' or 'Limited'. In the main analysis, the extent to which available measures were identified as having full provision among those who reported the availability of the measure is presented.

Availability for each measure was calculated as the proportion of those who identified the measure as present at either the local or national level out of all those who gave an answer for that specific measure. For enforcement/provision, only respondents who identified the measure as available were used to calculate the proportion of those who considered the measure had strong enforcement/full provision.

In the analysis, proportions of positive responses in the range of 60 % to 100 % were classified as good availability of the environmental prevention measure according to aggregated responses (full availability: 90 % or more; moderate availability: 60 % to 89 %).

The nature of the survey and the response rate mean that it is not a representative sample survey across different European countries. For this reason, it is not possible to make reliable comparisons across countries. Therefore in the presentation of results, only the aggregate European figure for responders is presented. This aggregate result may be affected by the response rate and the distribution of responses across countries. Consequently, it is not appropriate to make comparisons between individual countries.

To facilitate a visual comparison in geospatial charts showing availability, we have presented the proportion of those who identified measures as being strongly enforced using a denominator of all participants that responded to questions in a specific substance use domain (illicit drugs, alcohol or tobacco) (Figures C.1-C.4 in Appendix C). An alternative presentation, using the denominator of just the participants who identified a specific measure as available, is presented in the tables in the main text.

To assess the impact of the higher response rate for Spain (about one quarter of the total number of participants) on the overall availability of environmental prevention measures at the European level, additional analyses were performed to compare the availability of each measure declared by Spanish respondents with that declared by the rest of the respondents.

Statistical analysis

The number of respondents differed by topic as each participant could select from one to three topics of expertise.

The data cleaning and statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS), version 22, on the Qualtrics platform.

Descriptive statistics are presented as counts and proportions for categorical variables.

Appendix B: Environmental prevention in Europe questionnaire

ENVIRONMENTAL PREVENTION IN EUROPE

Dear Colleague,

Thank you for accepting our invitation to take part in this study.

The survey requires 15-25 minutes to be completed. In the preamble, we define briefly what is understood by environmental prevention in this project. Afterwards, the actual survey follows. Please try and complete the survey in one attempt. In case you would like to check the frequently asked questions (FAQ) or revisit the background information, please access the links available at the bottom of each page. Your identity will be kept confidential during the entire process: from data collection throughout data analysis and dissemination.

We are looking forward to receiving your input about environmental prevention measures in your country.

Sincerely,

David Foxcroft and Sinziana Oncioiu, EUSPR
Gregor Burkhardt, EMCDDA
Amador Calafat and Mariangels Duch, IREFREA

Environmental Prevention - Definition and Scope

The purpose of environmental prevention policies and interventions is to limit the availability of unhealthy or risky behaviour opportunities (or promote the availability of healthy ones).

Environmental prevention operates by changing the physical, economic, or regulatory contexts for behaviour. It involves low individual "agency", i.e. individual personal resources such as conscious decision making, motivation and intent do not need to be used to benefit from the specific intervention. Therefore, environmental prevention typically works without using persuasive messaging, although information can sometimes be provided alongside an environmental intervention.

In our definition and scope of environmental prevention we have grouped our examples according to the aspect of the environment they primarily modify: regulatory, economic or physical. These are meant to help organise the examples of environmental prevention that we provide, but we accept that there may be some overlaps between the areas. Nevertheless, we find it a useful way to cluster our examples.

The first type is regulatory environmental prevention interventions/measures. These are interventions that directly control what is allowable or accessible using legislation, regulations, restrictions, policing, institutional rules, bans and exclusions.

The second type is economic environmental prevention interventions/measures. These measures influence the costs of the healthy/unhealthy options through taxes, pricing policies and subsidies.

The third type is physical environmental interventions/measures. These are interventions that alter properties or placement of objects, stimuli or any built element within micro-environments (i.e. offices, bars etc) or macro-environments (i.e. cityscape, landscape etc) to foster certain health-related behaviour changes.

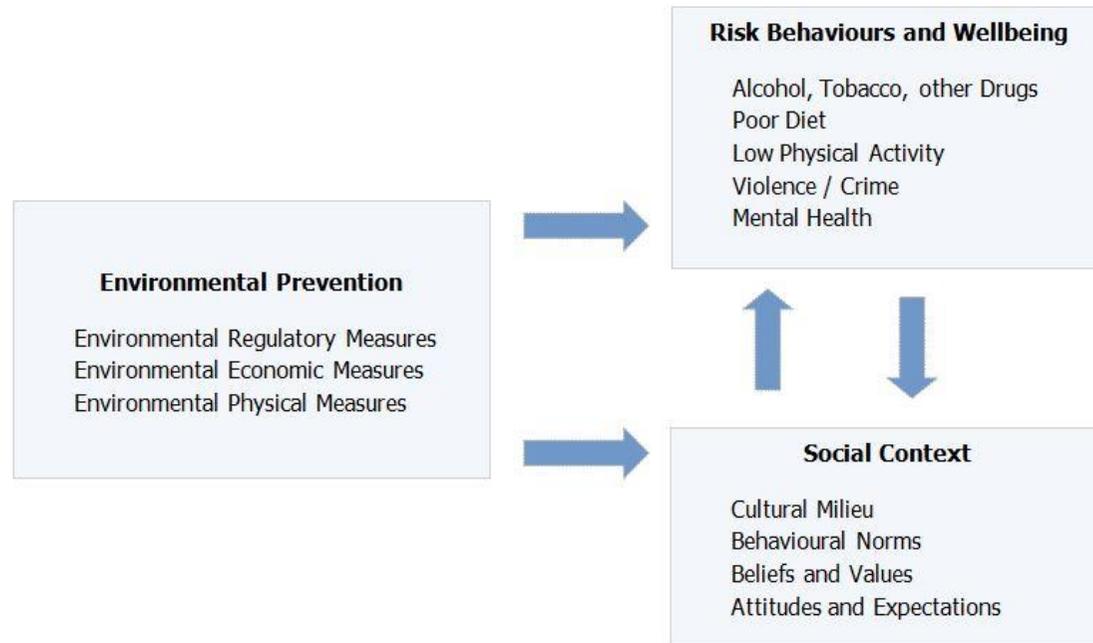


Figure 1. Causal model for environmental prevention

1. In which country are you currently based?

2. In which of the following areas are you able to answer some questions about the different types of environmental prevention in your country or setting? Please select up to three areas and additionally "Other" if appropriate. If you have more than three areas of expertise, please select the most relevant for your current/recent work.

- Illicit Drugs → Please read question 3 and then go to section A (page 5)
- Alcohol → Please read question 3 and then go to section B (page 9)
- Tobacco → Please read question 3 and then go to section C (page 13)
- Diet → Please read question 3 and then go to section D (page 17)
- Physical Activity → Please read question 3 and then go to section E (page 21)
- Crime and Violence → Please read question 3 and then go to section F (page 26)
- Mental Health → Please read question 3 and then go to section G (page 29)
- Other (Please specify below) → Please read question 3 and then go to section H (page 33)
- None of the above - I am not aware of environmental prevention interventions or policies in my country or setting → Go to question 4

3. Please check (type in "X") if the measures presented below are used in your country/setting. And tell us your opinion on how effectively they are enforced/implemented*. At the bottom of each cluster, please add other important examples.

**This question (second column) is optional as it may not apply to all the items.*

Enforcement/Implementation

- **Strong** - authorities are very effective in reinforcing/implementing the laws/regulations
- **Moderate**- authorities are partially effective in reinforcing/implementing the laws/regulations
- **Weak**- authorities are not effective in reinforcing/implementing the laws/regulations

Provision/Coverage

- **Full provision** - exists in all or nearly all locations
- **Moderate** - exists in many locations
- **Limited provision** - exists in relatively few location

Illicit Drugs

Please give us more details, if you can, for the environmental prevention measures presented above that you checked as available in your setting/country. For example if it is a new or longstanding approach, or how it is intended to work (i.e. "mechanism of action"). We are also particularly interested in papers and reports that provide evaluation evidence, so please list these.

Also use this space to add additional examples if you did not have enough room above.

Alcohol - Physical Measures

	Check if this exists in your country or setting				How good is the provision or coverage in each setting?			
	National	Local	None	Unsure	Full	Moderate	Limited	Unsure
Alter the design of glasses for alcoholic beverages in recreational settings (i.e. smaller volume, taller narrower glasses to avoid pouring in excess)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use crystal-free glasses (i.e. plastic) in recreational settings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alter music played in alcohol consumption environments (i.e. limit music volume)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (Please specify below)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (Please specify below)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (Please specify below)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Alcohol

Please give us more details, if you can, for the environmental prevention measures presented above that you checked as available in your setting/country. For example if it is a new or longstanding approach, or how it is intended to work (i.e. "mechanism of action"). We are also particularly interested in papers and reports that provide evaluation evidence, so please list these.

Also use this space to add additional examples if you did not have enough room above.

Tobacco - Physical Measures

	Check if this exists in your country / setting				How good is the provision or coverage in each setting?			
	National	Local	None	Unsure	Full	Moderate	Limited	Unsure
Removal of cigarette machines from public spaces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (Please specify below)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (Please specify below)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (Please specify below)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Tobacco

Please give us more details, if you can, for the environmental prevention measures presented above that you checked as available in your setting/country. For example if it is a new or longstanding approach, or how it is intended to work (i.e. "mechanism of action"). We are also particularly interested in papers and reports that provide evaluation evidence, so please list these.

Also use this space to add additional examples if you did not have enough room above.

Diet

Please give us more details, if you can, for the environmental prevention measures presented above that you checked as available in your setting/country. For example if it is a new or longstanding approach, or how it is intended to work (i.e. "mechanism of action"). We are also particularly interested in papers and reports that provide evaluation evidence, so please list these.

Also use this space to add additional examples if you did not have enough room above.

Physical activity

Please give us more details, if you can, for the environmental prevention measures presented above that you checked as available in your setting/country. For example if it is a new or longstanding approach, or how it is intended to work (i.e. "mechanism of action"). We are also particularly interested in papers and reports that provide evaluation evidence, so please list these.

Also use this space to add additional examples if you did not have enough room above.

Crime and Violence

Please give us more details, if you can, for the environmental prevention measures presented above that you checked as available in your setting/country. For example if it is a new or longstanding approach, or how it is intended to work (i.e. "mechanism of action"). We are also particularly interested in papers and reports that provide evaluation evidence, so please list these.

Also use this space to add additional examples if you did not have enough room above.

Mental Health

Please give us more details, if you can, for the environmental prevention measures presented above that you checked as available in your setting/country. For example if it is a new or longstanding approach, or how it is intended to work (i.e. "mechanism of action"). We are also particularly interested in papers and reports that provide evaluation evidence, so please list these.

Also use this space to add additional examples if you did not have enough room above.

SECTION H

OTHER - Environmental prevention measures

Please give us examples of regulatory, economic or physical environmental prevention measures for the specific area/areas that you mentioned. Please add, if you can, more details about those measures. For example if it is a new or longstanding approach, or how it is intended to work (i.e. "mechanism of action"). We are also particularly interested in papers and reports that provide evaluation evidence, so please list these.

- 4. In your country/setting, are any of the interventions you came across from the beginning of the survey until now, part of overarching health promotion programmes (i.e. healthy schools, healthy workplaces, healthy cities etc.)? Please describe briefly these programmes.**

- 5. Do you think there is something we missed in our operational definition of environmental prevention, provided in the background information at the start of the survey? Please could you tell us what it is?**

6. The following three questions focus on cannabis regulation. The reason for including them is to inform the discussion at European Union level about cannabis legalisation and possible decriminalization.

a) How do you see the role of environmental prevention beyond penal law in the case of cannabis. i.e. if cannabis was legalised?

b) Which are, in your opinion, the environmental prevention measures which would be most needed and should be compulsory to prevent problematic cannabis use?

c) Imagining that the environmental prevention approaches described before would be in place, would you still be worried about the issue of cannabis use? Please tell us why.

5. Which of the following describe best your current field of professional activity? Please check all that apply.

- Academia
- Public health institution/ governmental structures
- Drug prevention/treatment agency
- Health related non-governmental organization/charity
- Social work
- Other (Please specify)

6. How many years of work experience in the area(s) mentioned above do you have?

- None

- Less than 1
- 2-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- More than 20 years

7. Through which network did you receive this survey? Please select all that apply.

- EMCDDA - European Centre for Drugs and Drug Addiction
- EUSPR - European Society for Prevention Research
- IREFREA- European Institute of Studies on Prevention
- SPAN - Science for Prevention Academic Network
- Reitox Network
- UNODC - United Nations Office on Drugs and Crime
- Other (Please specify)

8. Which is your primary academic training/formation?

- Psychology
- Sociology
- Anthropology
- Biology
- Medical Sciences
- Economics
- Political sciences
- Geography
- Public Health
- Urban planning
- Other (Please specify)

9. What gender are you?

- Female
 Male
 I do not want to disclose

10. Please could you recommend us colleagues of yours who could be interested in filling in this survey. Thank you for distributing the link below or sharing with us their e-mail addresses.

<http://bit.ly/1Uil00g>

E-mail address(es):

11. If you wish, please give your email if you would like us to send a copy of the results and final report.

E-mail address:

Thank you very much for your contribution!

Appendix C: Availability of environmental prevention measures and participants' assessment of strong enforcement/full provision, by country

Figure C.1. Proportion of participants reporting environmental prevention measures for illicit drugs as available by country (left) and whether strongly enforced by country (right)

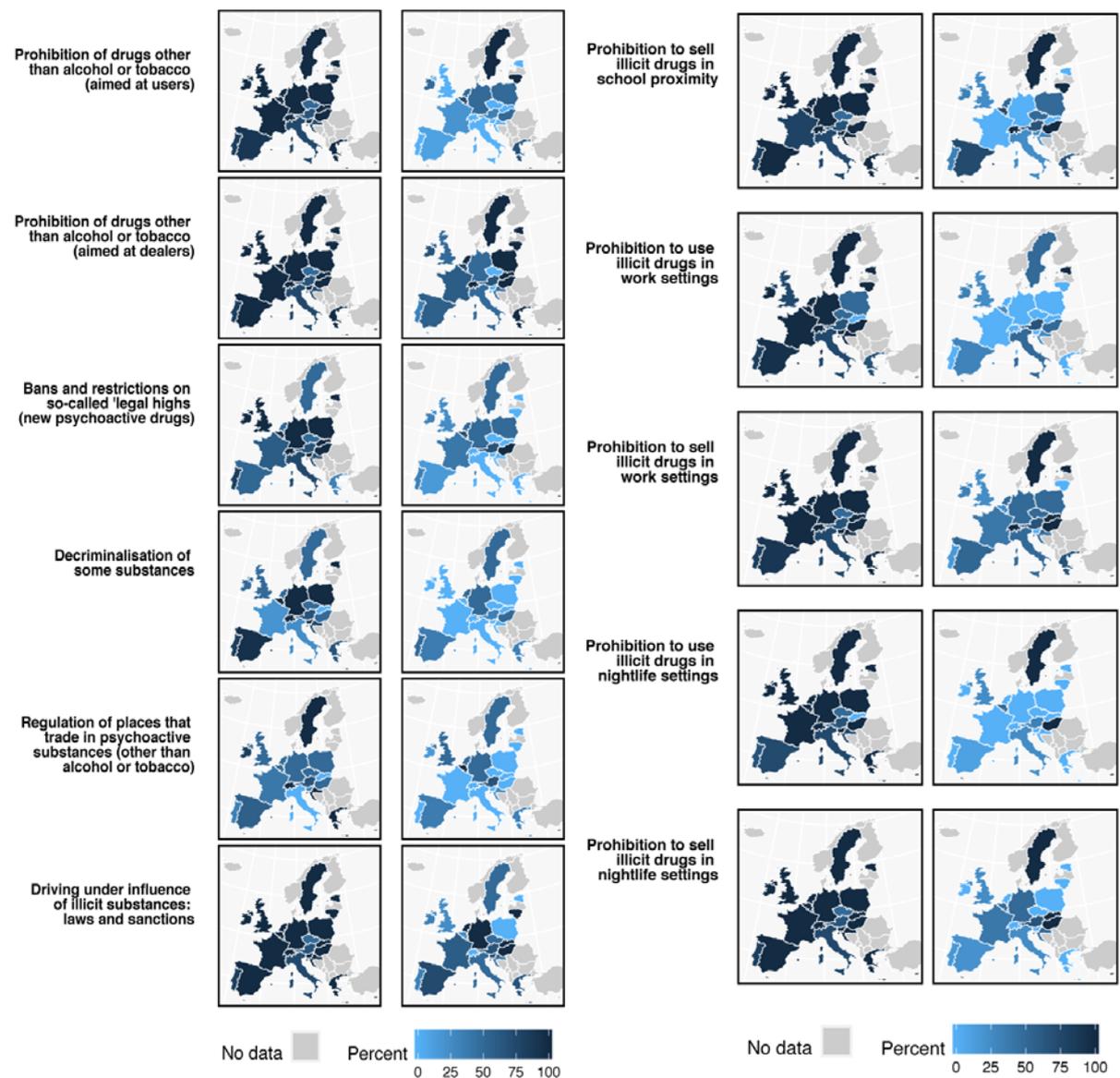
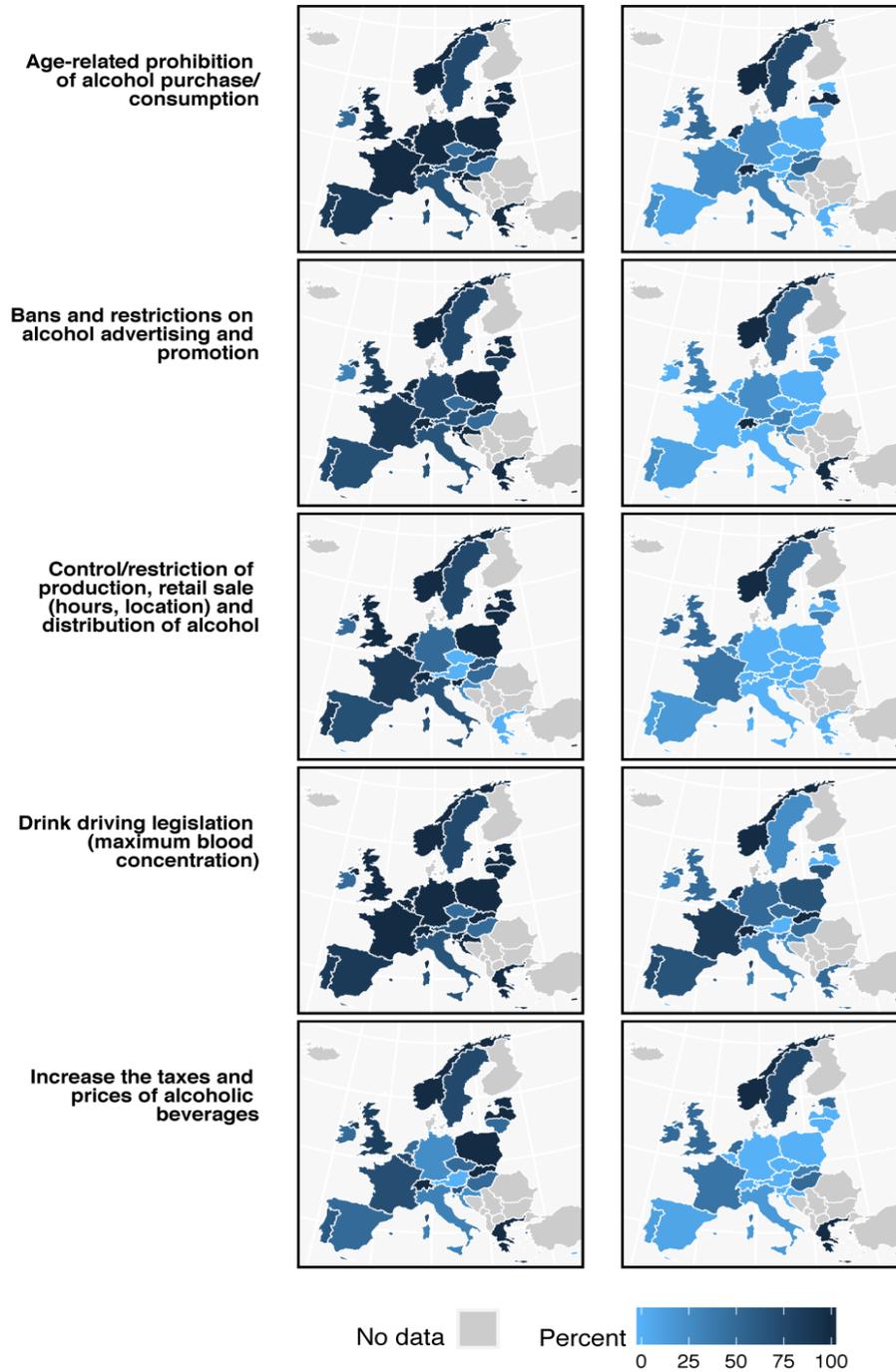
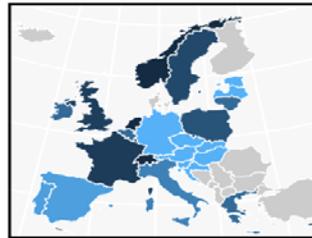
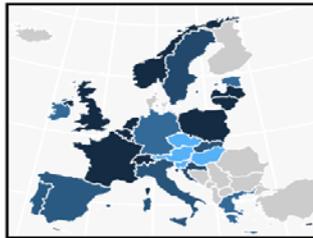


Figure C.2. Proportion of participants reporting environmental prevention measures present for alcohol by country (left) and whether strongly enforced/full provision (for physical measures) by country (right)



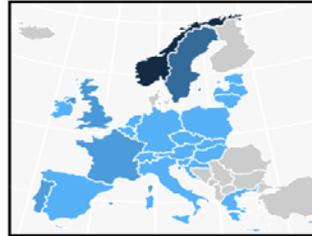
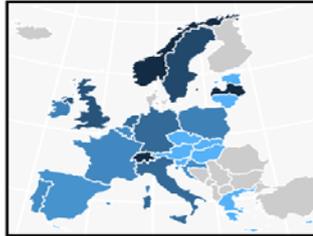
**Licensing system for
retailers of alcoholic
beverages**



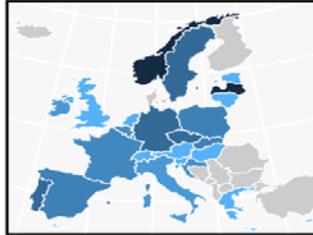
**Prohibition to sell
alcoholic beverages to
intoxicated/impaired
patrons**



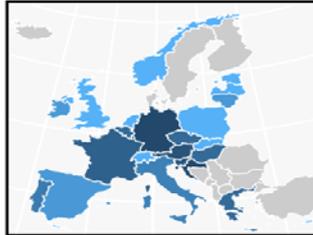
**Mandatory alcohol
training for bar staff
(servers, waiters)**



**Bans to display
alcoholic beverages
at the point-of-sale
in retail stores**



**Lower the prices
of soft drinks in
recreational venues**



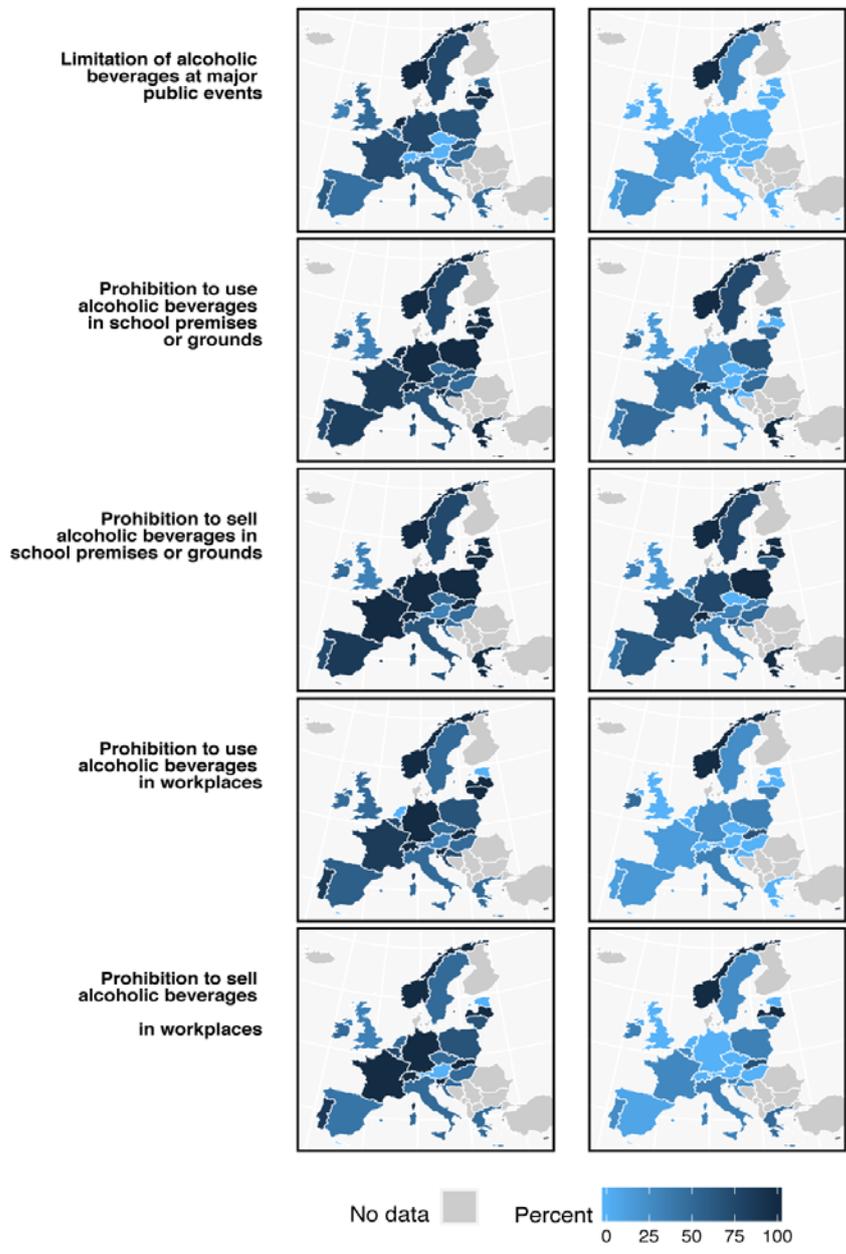
No data



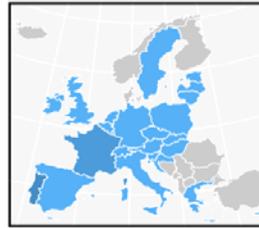
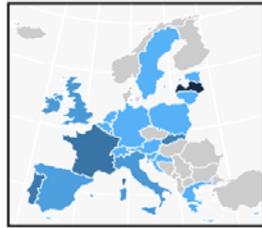
Percent



0 25 50 75 100

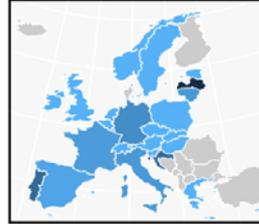
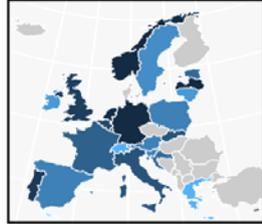


Alter the design of glasses for alcoholic beverages in recreational settings



c
1

Use crystal-free glasses (i.e. plastic) in recreational settings



1

Alter music played in alcohol consumption environments

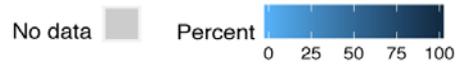
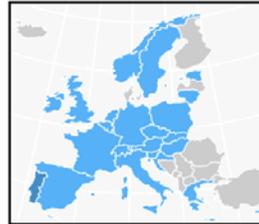
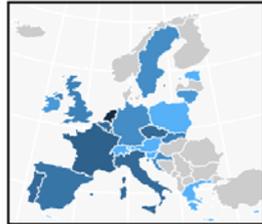
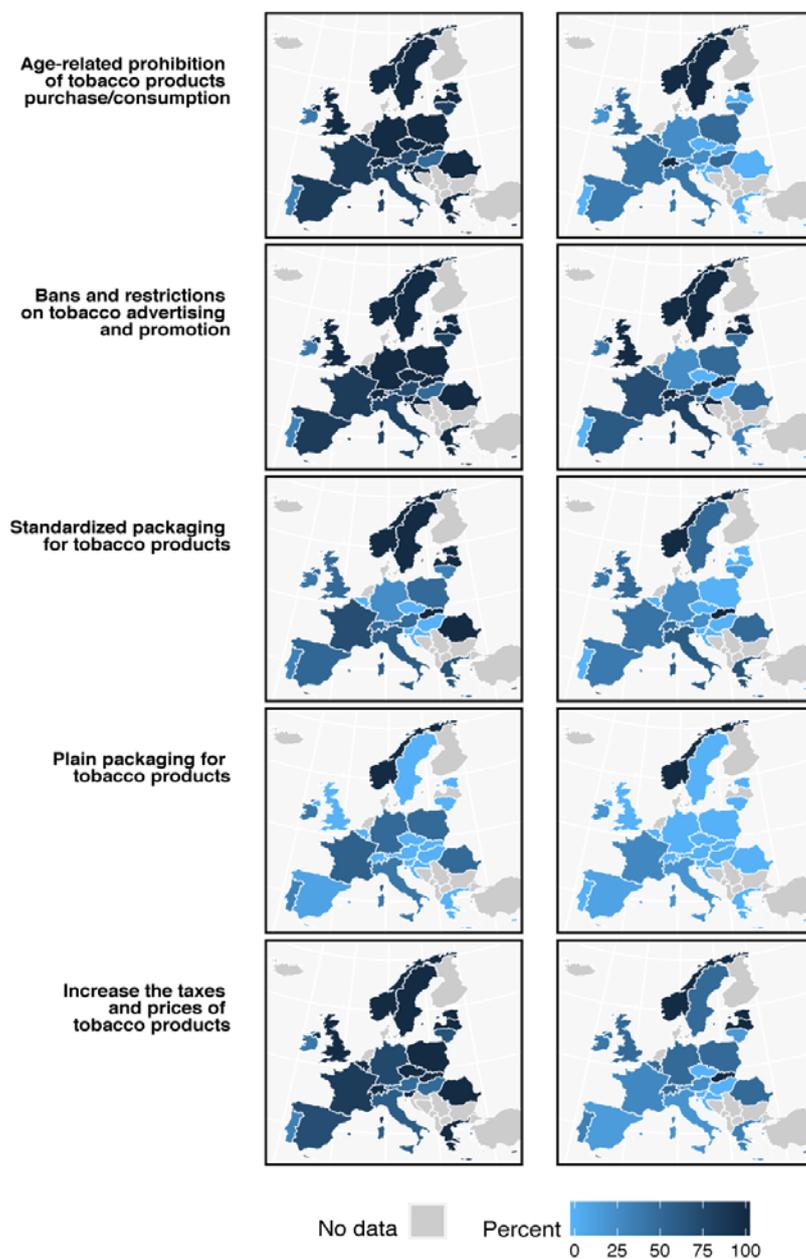
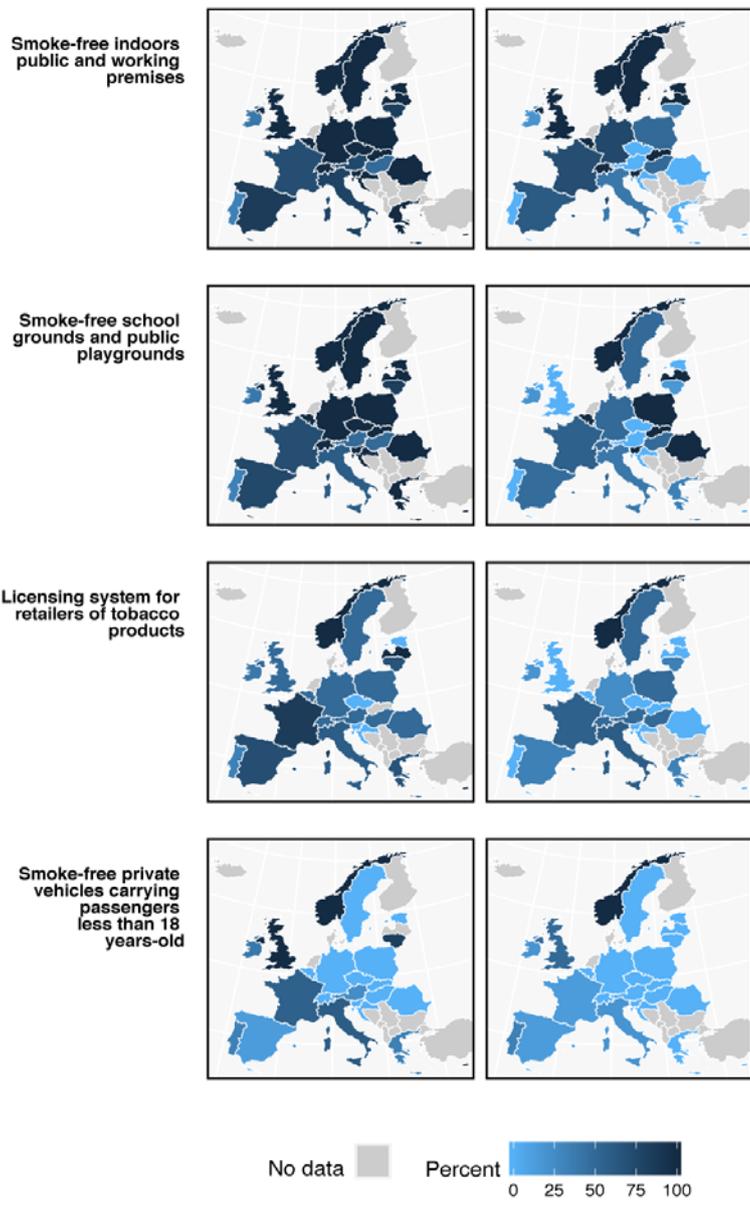
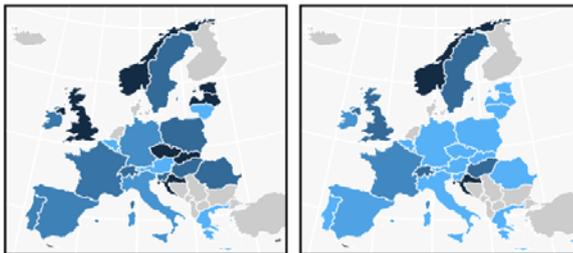


Figure C.3. Proportion of participants reporting environmental prevention measures present for tobacco by country (left) and whether strongly enforced by country (right)

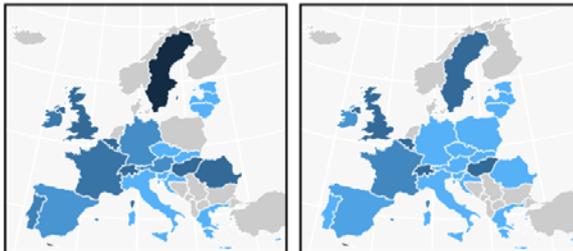




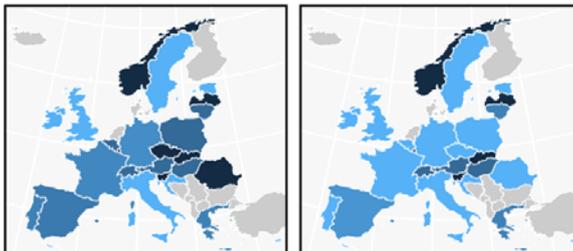
Bans to display tobacco products at the point-of-sale in retail stores



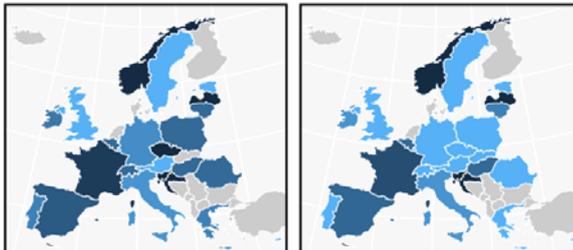
Prohibition of cigarettes and hand-rolled tobacco with characteristic odour



Prohibition to sell tobacco products in school proximity



Prohibition to sell tobacco products in workplaces



Removal of cigarette machines from public spaces

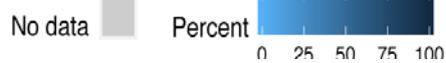
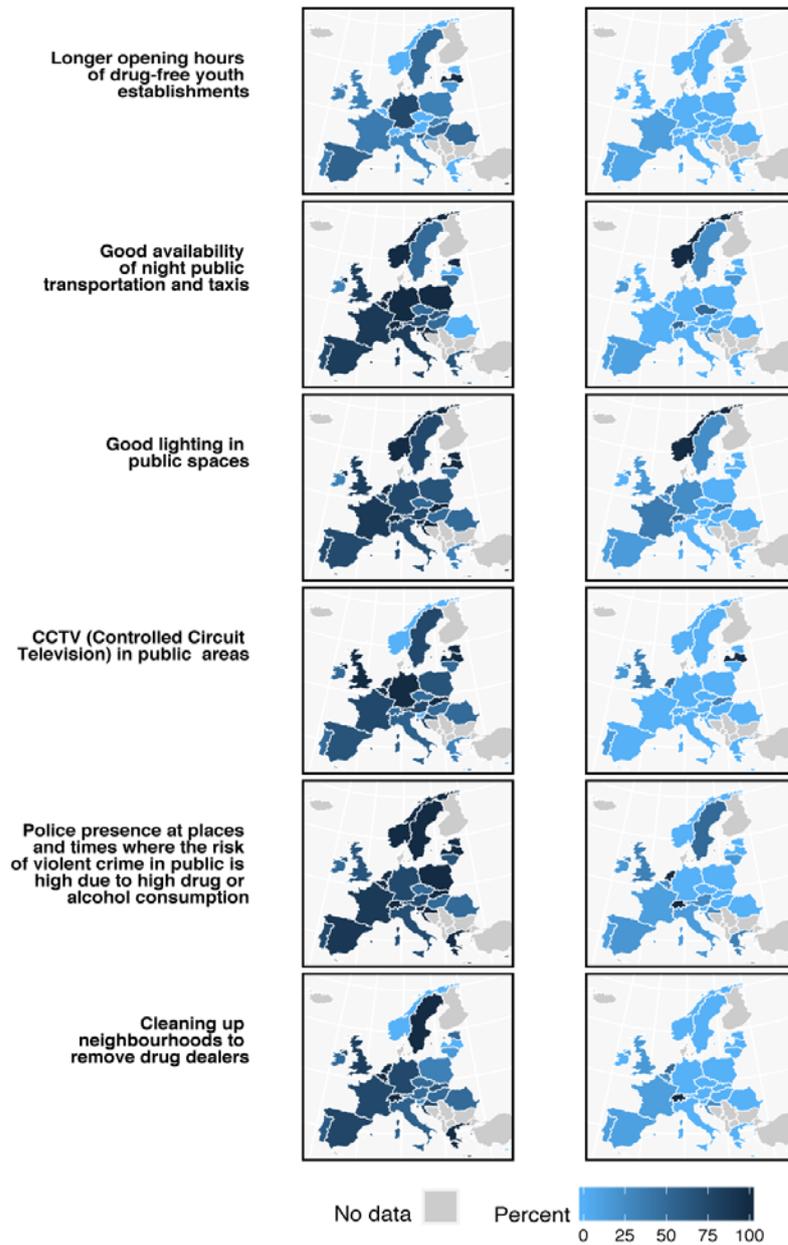


Figure C.4. Proportion of physical environmental prevention measures present for illicit drugs, alcohol and tobacco reported by country (left) and whether fully provided by country (right)



Appendix D: List of publications used to identify the environmental prevention measures for illicit drugs, alcohol and tobacco

- Burkhart, G. (2011), 'Environmental drug prevention in the EU. Why is it so unpopular?', *Adicciones* 23 (2), pp. 87-100.
- European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) (2016), *Prevention Workbook*, EMCDDA, Lisbon (unpublished).
- Foxcroft, D. R. (2014), 'Can prevention classification be improved by considering the function of prevention?', *Prevention Science* 15 (6), pp. 818-822. <http://doi.org/10.1007/s11121-013-0435-1>.
- Hollands, G. J., Shemilt, I., Marteau, T. M., Jebb, S. A., Kelly, M. P., Nakamura, R., et al. (2013), 'Altering micro-environments to change population health behaviour: towards an evidence base for choice architecture interventions', *BMC Public Health* 13, p. 1218. <http://doi.org/10.1186/1471-2458-13-1218>.
- Joossens, L. and Raw, M. (2014), *The Tobacco Control Scale 2013 in Europe*. Association of European Cancer Leagues. Retrieved from http://www.europeancancerleagues.org/images/TobaccoControl/TCS_2013_in_Europe_13-03-14_final_1.pdf
- Karlsson, T. and Österberg, E. (2007), 'Scaling alcohol control policies across Europe', *Drugs: Education, Prevention & Policy* 14 (6), pp. 499-511.
- Lindemann, M., Karlsson, T. and Österberg, E. (2015), *Addiction and lifestyles in contemporary Europe: reframing Addictions Project (ALICE-RAP), policy scales, Deliverable 14.1, Work Package 14.1*. Retrieved from http://www.alicerap.eu/resources/documents/doc_download/226-deliverable-14-1-policy-scales.html