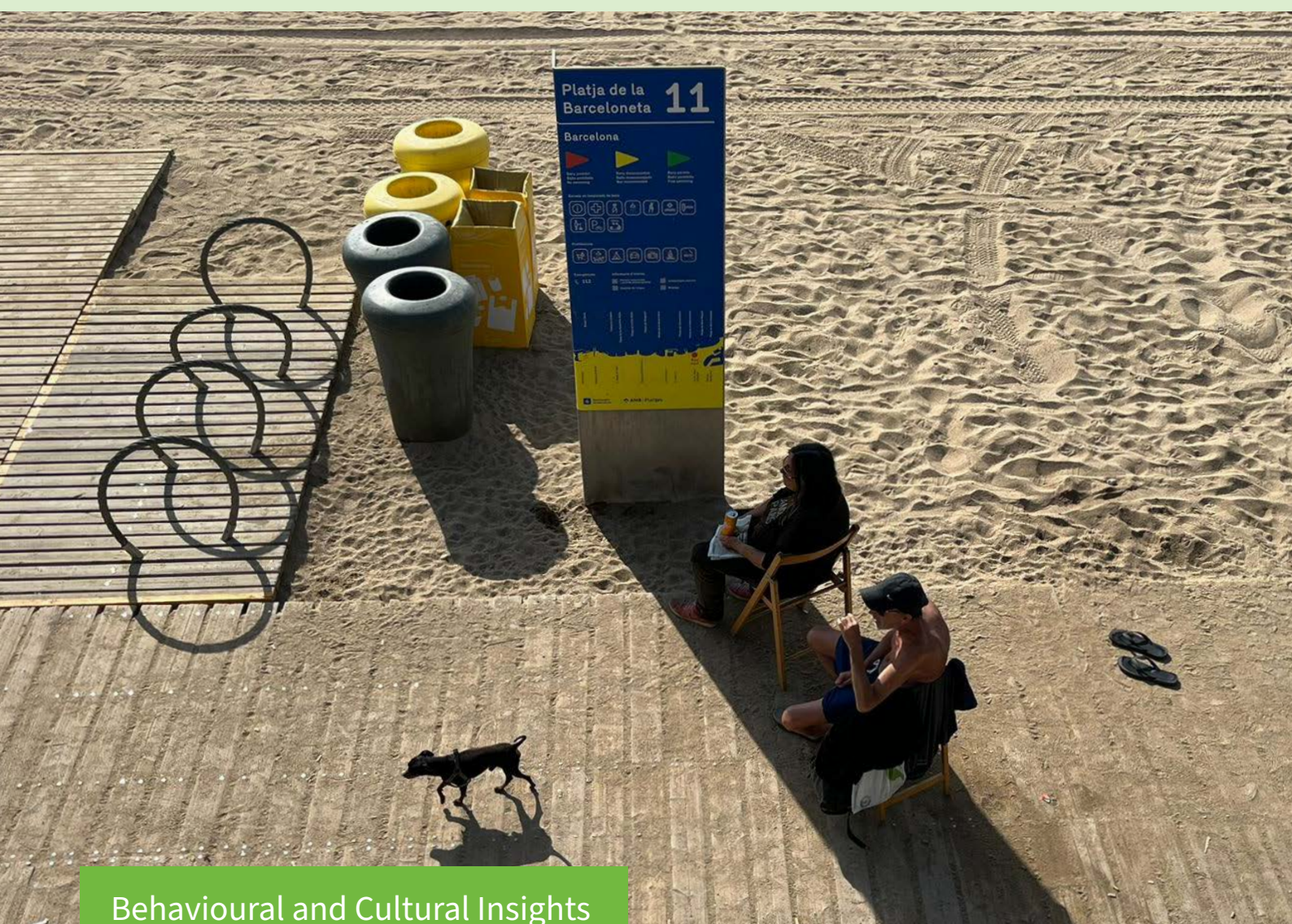


# Sustainable behaviours for environment and health challenges



Behavioural and Cultural Insights  
policy brief series

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# Sustainable behaviours for environment and health challenges

Behavioural and Cultural Insights  
policy brief

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## Abstract

Behaviours are central to many environmental and health challenges, including actions by individuals, communities, commerce, industry and health service providers. Infrastructure, service and information provision, legislation, and regulation all play critical roles in enabling, supporting and promoting positive behaviours for a sustainable future. Behavioural and cultural insights (BCI) provide an approach to systematically understand behaviour and facilitate

the changes needed to disrupt the negative impacts and promote positive environmental impacts on our health. This policy brief explores how a BCI approach can improve outcomes by increasing understanding of behavioural and cultural determinants, and by creating more evidence-based and cost-effective policies and interventions to address environment and health challenges.

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**Document number:**

WHO/EURO:2024-9205-48977-72979

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Design by: Essensen.dk

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# Acknowledgements

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This policy brief was written by Veerle Snijders, Katrine Bach Habersaat and Tiina Likki from the Behavioural and cultural insights Unit at the WHO Regional Office for Europe, in collaboration with Matthias Braubach, Sinaia Netanyahu, Dorota Iwona Jarosinska and Francesca Racioppi from the European Centre for Environment and Health, WHO Regional Office for Europe.

Particular thanks go to external reviewers Vera Araújo-Soares (Heidelberg University, Heidelberg, Germany), Sanchayan Banerjee (Vrije Universiteit Amsterdam, Amsterdam, Netherlands (Kingdom of the)), Cornelia Betsch (University of Erfurt, Germany), Cornelia Guell (University of Exeter, Exeter, United Kingdom), Christopher Jäger (Bernhard Nocht Institute for Tropical Medicine, Hamburg, Germany), Christopher Jones (Heidelberg University, Heidelberg, Germany), Stephan Lewandowsky (University of Bristol, Bristol, United Kingdom), Susan Michie (University College London, London, United Kingdom), James Reynolds (Aston University, Birmingham, United Kingdom), and Jet Sanders (London School of Economics and Political Science, London, United Kingdom, Dutch National Institute for Public Health and the Environment, Bilthoven, Netherlands (Kingdom of the)).

The development of this policy brief was informed by two scoping reviews exploring how Behavioural and Cultural Insights are currently applied to two specific areas: 1) the use of urban green and blue spaces, and; 2) behavioural adaptation to ambient air pollution. The reviews and policy brief were produced with technical support from Heidelberg University, Heidelberg, Germany and the Bernhard Nocht Institute for Tropical Medicine, Hamburg, Germany.

The reviews and policy brief were produced with generous financial assistance from the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection.

# Introduction

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The environment is a major determinant of health; globally as much as 24% of all deaths are attributable to environmental risk factors (1). Factors such as air pollution, noise, unsafe water, chemicals, improper waste management and climate change have detrimental impacts on health and well-being; conversely, exposure to parks, rivers and lakes, and other health-supporting environments can support healthy behaviours, mental health and well-being.

Despite the recognition that access to a clean and healthy environment is a human right (2), the intertwined impacts of the triple planetary crisis – climate change, environmental pollution and biodiversity loss (2–4) – have grown in recent years. Climate change will continue to have profound impacts on public health as rising temperatures, extreme weather events and shifts in ecosystems threaten human health and amplify health inequalities (5,6). A rise in global temperature by 2°C would increase annual heat-related deaths for those over 65 years of age by around 370% by 2050,

not including indirect heat-related deaths due to the increased spread of infectious diseases such as dengue fever (6). One in four cities globally is now concerned that their health system is ill prepared to tackle future health problems related to climate change (7).

Given these rapid and significant environmental changes, and in recognition of the wide-ranging actions needed to tackle the related health challenges, Member States of the WHO European Region adopted the Budapest Declaration in July 2023 (3), which prioritizes urgent, wide-ranging action on Environment and Health (EH) challenges, towards healthy, resilient and sustainable societies. Delivering on these commitments depends on the behaviours of everyone engaged and affected in every setting, and these behaviours are only possible through the provision of supporting and enabling functions such as those related to infrastructure, policy, regulation and provision of services and information.



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# Behaviours are at the heart of environment and health challenges

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Behavioural and cultural insights (BCI) offer a lens through which to see opportunities for and leverage positive behaviours through evidence-based and effective interventions (8,9). Positive behaviours for a sustainable future often have co-benefits for individual health. For example, sustainable diets often increase healthy nutrition, help prevent noncommunicable diseases (NCDs), decrease agricultural emissions and reduce resource depletion. Similar effects are seen for active commuting (cycling, walking) instead of driving. In addition to mitigation behaviours, other relevant behaviours relate to climate change adaptation, for example, seeking shade in urban green spaces and increasing intake of drinking-water to save lives during heat waves.

Such behaviours are influenced by physical and social environments, by cultural values and social norms, and by the policies, practices, information and infrastructure provided by companies, governmental organizations and leaders. For example, the provision of accessible public transport and cycleways can allow commuters to decrease their emissions; access to recycling facilities can enable upstream waste separation; and a reduction in the use of hazardous chemicals by industry can improve people's trust in public water quality and thus decrease purchases of plastic bottled water.

Individual decisions are also crucial. How people behave in their workplaces, neighbourhoods and homes can influence their own health and that of others, both directly and indirectly. Seventy-two percent of global greenhouse gas emissions can be attributed to household consumption and behaviour (10). With effective government and industry support, individuals can substantially reduce this figure by decreasing trips by car and plane, consumption of meat and dairy, and use of non-renewable energy (11).

## BCI offers an approach to systematically improve EH-related behaviours

Recognizing that behaviour is one of the main influencers of health and well-being outcomes (12), Member States have adopted a regional resolution and action framework on BCI and a global resolution on behavioural sciences for better health (13, 14).

Applying BCI involves a systematic focus on relevant behaviours through the following actions.

- **Exploring and understanding the individual and contextual factors that affect EH-related behaviour (see consideration 1).** For example, waste practices, which impact health and well-being outcomes, are impacted by individual values, the social and cultural environment, as well as contextual factors like physical environments and convenience (15).
- **Using BCI to implement policies, services and communications that seek to promote, support and enable positive behaviours through inclusive and equitable approaches (see considerations 2, 4, 5 and 6).** For example, cities can develop sustainable transportation with EH benefits through engagement and consultation with the public to understand behavioural patterns and tailor solutions to their needs and circumstances. These factors need to be fully explored to be effectively addressed or leveraged.
- **Evaluating the impact of interventions, policies, services and communications to ensure their effectiveness, and to add to the global evidence base (see consideration 3).** For example, information and other actions that seek to improve knowledge, build trust and change perceptions to ultimately reduce household emissions can be tested through robust methods to understand and document what type of intervention has an impact with whom and why (16).



## CASE STUDY 1.

### BCI-informed air pollution alerts encourage greener transportation

Over 99% of the world's population is consistently exposed to higher levels of air pollution than that advised by WHO air quality guidelines (17). Although ongoing efforts have resulted in substantial air quality improvements, encouraging people to adapt to existing ambient air pollution is still necessary to decrease their harmful exposure (3). While the benefits of physical activity outweigh the harms of short-term air pollution exposure in most cases, route adaptations or travelling at different times can be beneficial, especially for those at higher risk of harm.

Pollution alerts through websites, text message or apps are common interventions for promoting adaptations to ambient air pollution, but these can lose their effectiveness over time. A study in London, United Kingdom, found that adding BCI-informed messages targeting recipients' capability and motivation factors improved the impact of text message alerts. Messages

conveyed the level of air pollution and potential for harm, but also encouraged people's self-efficacy in adapting, emphasized the benefits of the protective behaviours, and encouraged people to plan how to respond (18).

The addition of a supportive environment is likely to produce even greater benefit. In a study in Atlanta, United States of America, local government employees received air pollution alerts as well as supportive environments enabling them to change behaviours accordingly through greater work schedule flexibility and additional car-sharing offers. As these changes were introduced and facilitated by managers and co-workers, they also increased supportive social norms, resulting in both physical and social opportunities for change (see also Consideration 1). As a result, the number of work trips taken by car decreased by nearly 20% (13).

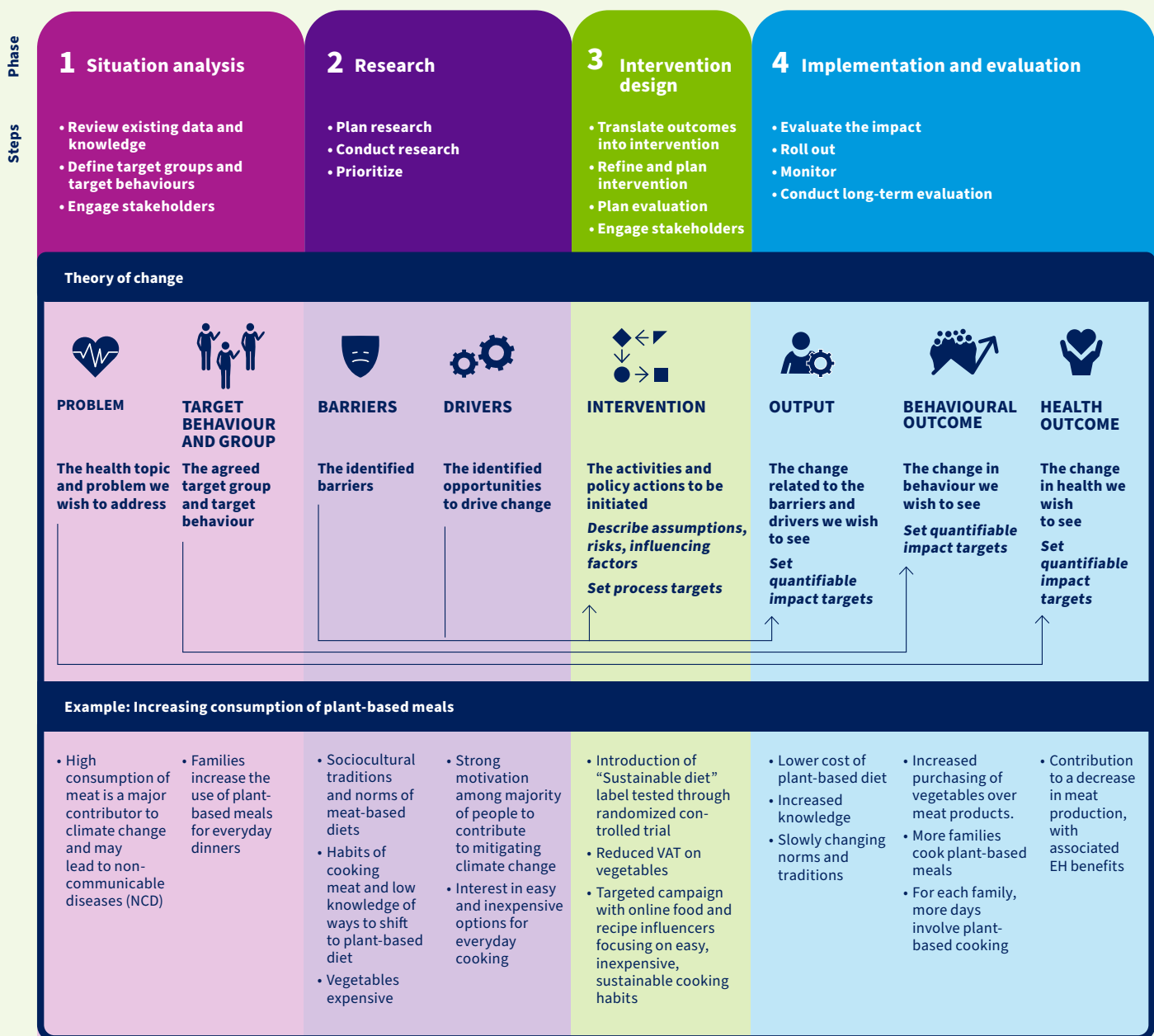
## Frameworks and tools

Several existing frameworks and tools can be used to promote, support and enable positive behaviours in different contexts (19, 20). The WHO Regional Office for Europe developed the Tailoring Health Programmes (THP) approach, which involves four phases, each with multiple steps (see Fig. 1). The process is based on a theoretical model and theory of change, involves community engagement, and is iterative. The accompanying THP tool book offers detailed guidance for each step (21).

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Seventy-two percent of global greenhouse gas emissions can be attributed to household consumption and behaviour.



**Fig. 1. THP PHASES, STEPS AND THEORY OF CHANGE WITH CASE EXAMPLE (21)**

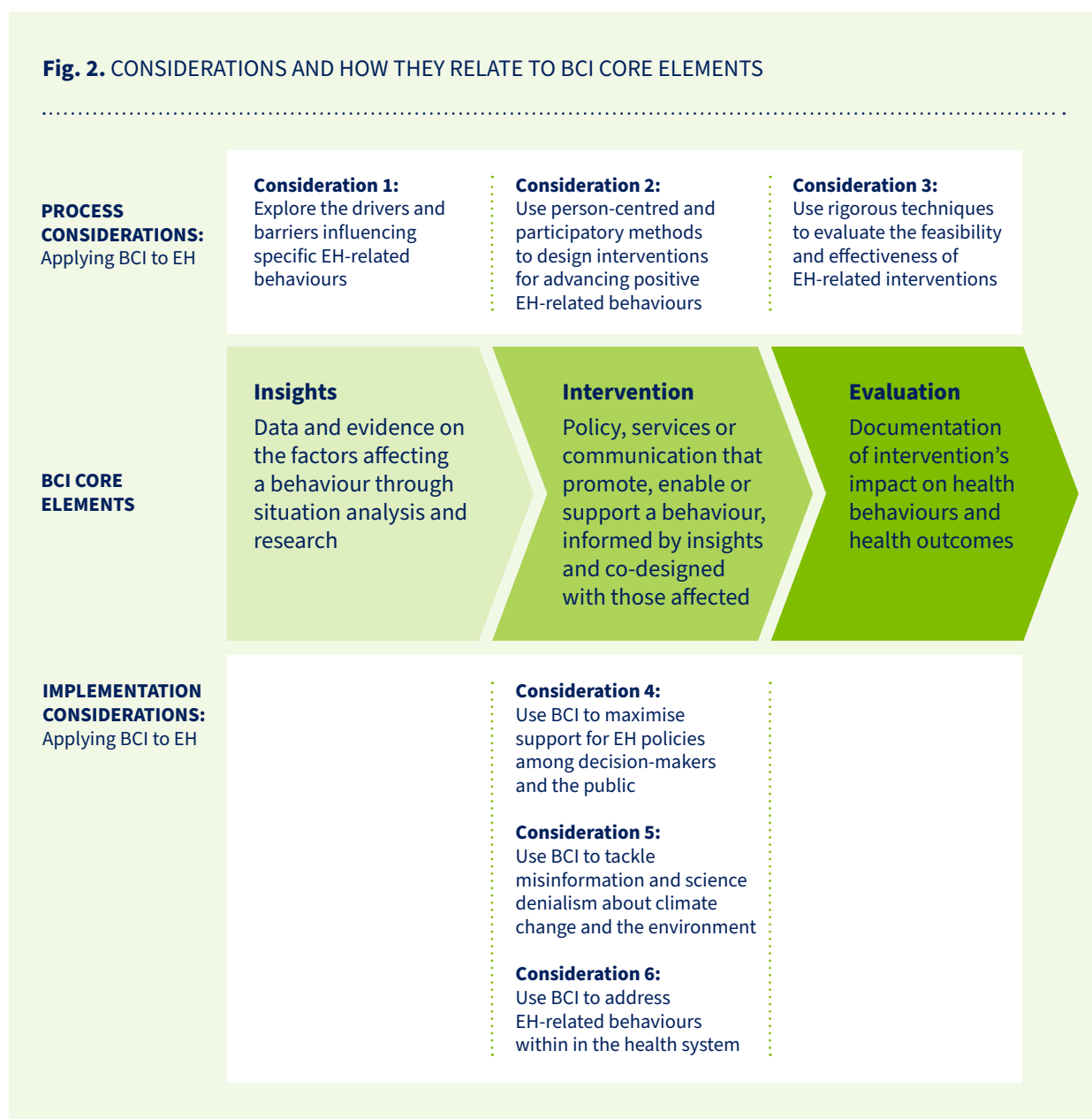


# Considerations for policy-makers and implementers seeking to apply BCI to EH challenges

This section presents six considerations for applying BCI to EH (see Fig. 2). Any BCI-informed intervention is more effective when integrated with other efforts

related to EH, and when planned and implemented in consultation with experts in BCI.

**Fig. 2. CONSIDERATIONS AND HOW THEY RELATE TO BCI CORE ELEMENTS**



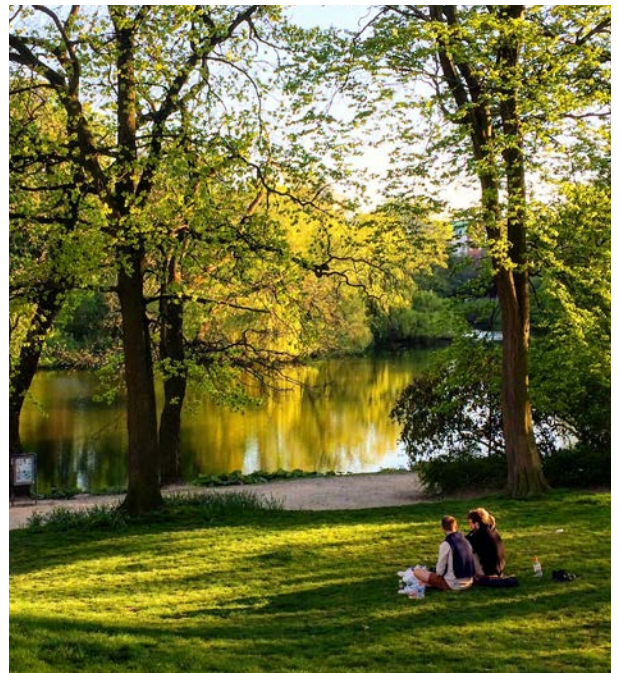
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Understanding the factors that affect a given behaviour is critical for the design of effective, equitable and people-centred policies and interventions.

**Consideration 1: Explore the drivers and barriers influencing specific EH-related behaviours**

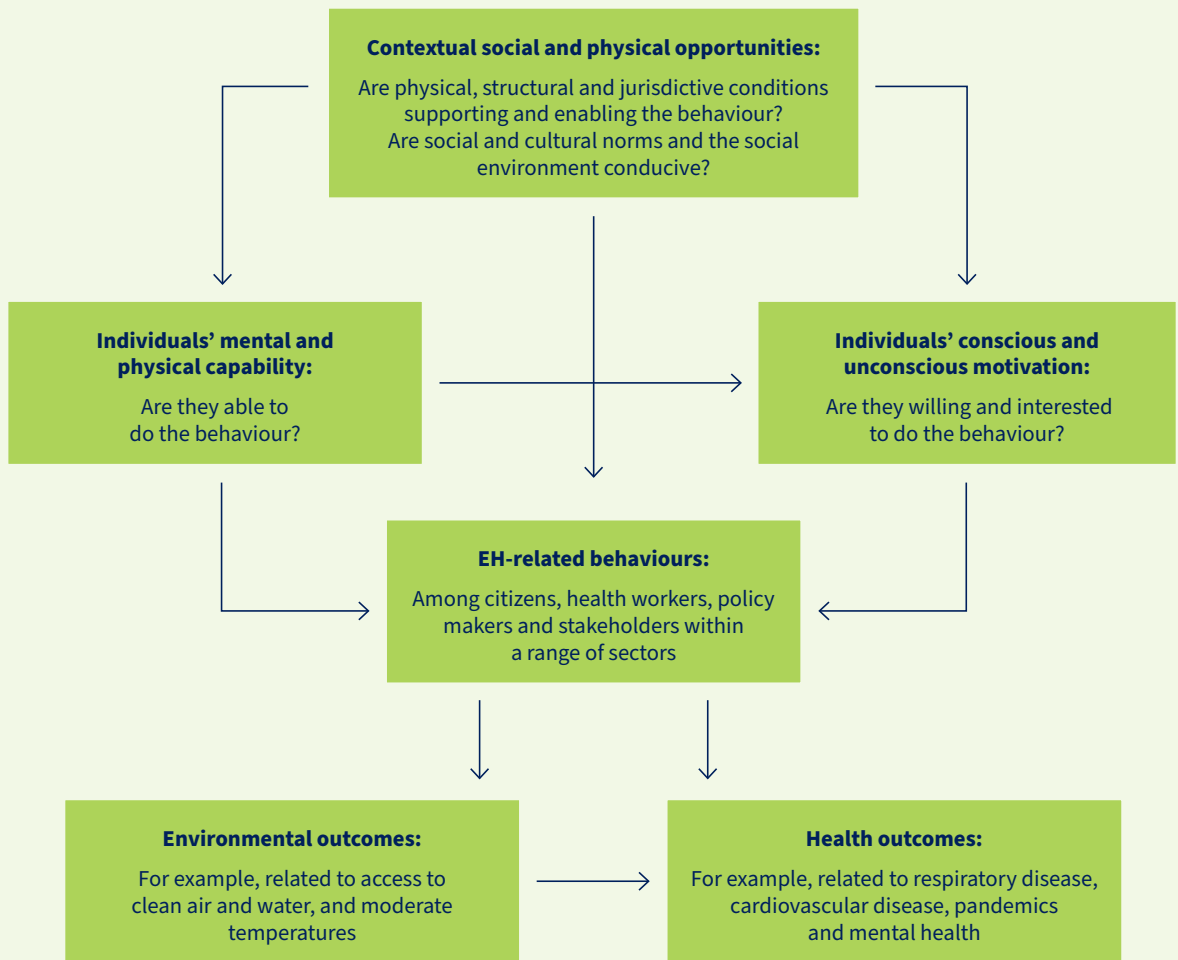
Understanding the factors that affect a given behaviour is critical for the design of effective, equitable and people-centred policies and interventions. The THP approach draws on an adapted COM-B model, which posits that three factors are necessary for behaviour change (see also Fig. 3) (22).

- **Capability:** Do people have the mental and physical capability needed to adopt the behaviour, such as resources, skills and knowledge? This could include people’s understanding of the impact of environmental stressors on health and well-being or the environmental footprint of their lifestyle decisions, but could also relate to things like their physical ability to use active transport or their belief in their own efficacy to make changes.
- **Motivation:** Are people motivated and stimulated to make behavioural changes? This could relate to, for example, people’s trust in the climate change information provided by scientists, belief in their ability to have an impact, sense that new behaviours fit with their values and culture, belief that healthy behaviours can have direct personal benefit, or feelings of accountability for environmental impact and the fate of future generations. Motivation is also influenced by mental shortcuts, such as present bias, which can lead people to focus on the short-term and ignore the long-term; availability bias, which can lead people to exaggerate some risks and underestimate others; and other psychological factors. These are discussed in more detail in the THP guide (21).<sup>1</sup>
- **Opportunity:** While capability and motivation are individual factors, opportunity summarizes the contextual factors that influence behaviour. These factors can be divided into two subgroups:
  - **Sociocultural opportunity:** This refers to how people’s social and cultural environments, practices and values support or discourage certain behaviours. For example, are traditional foods generally plant- or meat-based? Are others in the social network shopping for sustainable and locally produced food? Do trusted people or organizations provide accurate EH information? Are customers supportive of a business transition to more sustainable practices?
  - **Physical opportunity:** This refers to how the physical environment is conducive or restrictive to certain behaviours. For example, are regulations and incentives in place for sustainable industry practices, and for making the health choice the easy choice? Is public transport convenient, cost-effective and reliable compared to car transport? Are urban green spaces available, accessible and appealing for citizens? Are healthy and sustainable food choices accessible?



<sup>1</sup> For an introduction to and an overview of biases and heuristics that influence health, refer to Box 15 of the THP guide.

**Fig. 3. THREE FACTORS THAT AFFECT BEHAVIOURS AND EH OUTCOMES (22)**



**CASE STUDY 2:**

**Accessible urban green and blue spaces can benefit health and well-being**

Urban green and blue spaces are public spaces such as nature parks, water bodies or open spaces that offer various recreational and ecological benefits. Sustainable Development Goal 11 recommends “universal access to safe, inclusive and accessible green and public spaces” by 2030 (23). Improving access to these spaces and promoting their use can have direct and indirect benefits on health, social connections, mental health, well-being and the environment, in particular through physical activity, leisure, social interactions and exposure to nature (24–26).

This field is underexplored but the available literature shows that whether people use these spaces is mostly influenced by their physical and social environments, such as the ease of access, the availability of facilities and amenities, and their perceived safety and quality. Local authorities and park managers therefore have a direct impact on the use of and benefits derived from urban green and blue spaces by choosing the positioning, opening hours and facilities available (27). Health professionals can also use social prescribing (recommending patients to evidence-based social and arts-based therapies and activities) and nature prescribing (recommending that patients spend time in nature) to promote the use of these spaces to improve social connectedness, nature connectedness and mental health (28–30).

**Consideration 2: Use person-centred and participatory methods to design interventions for advancing positive EH-related behaviours**

Policies that aim to address public behaviour should facilitate human agency throughout the processes of design and implementation (31). Actions to engage, motivate and empower citizens, communities and others affected, for example, through public hearings, community meetings, co-design and other measures, can engage a more diverse range of stakeholders, draw on their experience and lead to more effective action that is tailored to their needs and circumstances.

**CASE STUDY 3:**

**Citizens assembly for climate change**

Participatory methods have enabled citizens to debate issues that are challenging to address through the political system alone. In Ireland, for example, a citizens' assembly deliberated over climate issues and suggested 13 recommendations ranging from taxing agricultural greenhouse gas emissions to ensuring climate change is at the centre of government policies (32). A special parliamentary committee was established to progress the assembly's recommendations, and these informed the country's climate action plan (33).

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Participatory methods have enabled citizens to debate issues that are challenging to address through the political system alone.



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**Consideration 3: Use rigorous techniques to evaluate the feasibility and effectiveness of EH-related interventions**

When possible, BCI interventions should be evaluated and tested to create empirical evidence of what works and why, and to inform improvements, scale-up and replication. Impact evaluations can include randomized controlled trials, natural experiments or quasi-experiments, among others. Impact evaluations suited to the context are useful to assess whether a specific intervention has the intended effect on behaviours, and to identify the most (cost-) effective interventions (34).

Other approaches, including process and qualitative evaluations, can provide insights into the acceptability and feasibility of interventions, why an intervention works (or does not work), and how it affects well-being, trust and social cohesion.

**Consideration 4: Use BCI to maximize support for EH policies among decision-makers and the public**

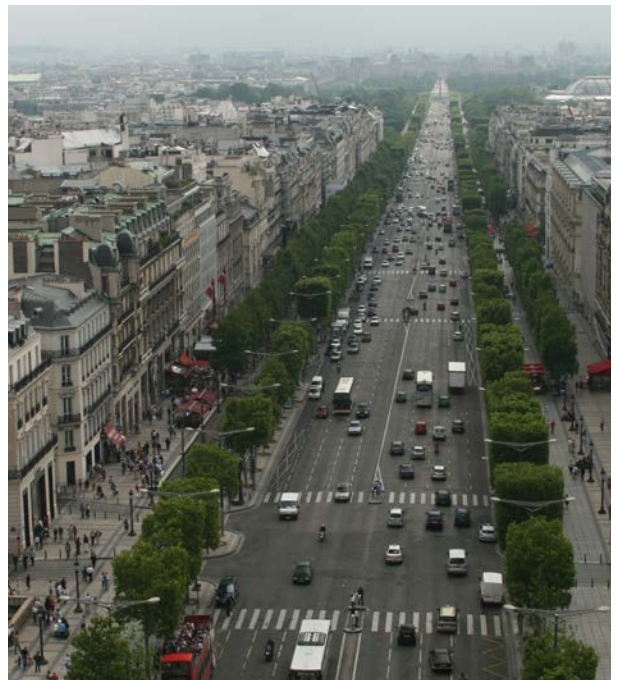
Many EH challenges benefit from solutions that are implemented via policies or organizational practices that reduce the need for individual decision-making, particularly when it is difficult for individuals to know which behaviour is more or less harmful. This means, policy- and decision-makers are major actors of change. However, such decision-makers can hesitate to adopt policies that may be unpopular, such as speed limits, taxes on unsustainable products or emissions ceilings. The barriers and drivers to consensus (or majority) among decision-makers need to be understood, acknowledged and overcome as much as those of citizens (38,39).

Public and decision-maker support for policies are intertwined, and documented public support for a policy can drive political consensus (40). Additionally, measuring public perceptions about policies can identify barriers and drivers to implementation and give the public a voice in the policy-making process (41). Understanding why a policy achieves low or high support can even prompt the redesign of the policy or its implementation or further investment in communications, which has documented impact on public support and policy effectiveness (16,42,43).

**CASE STUDY 4:****Social norm comparisons decrease household electricity consumption**

Energy use, particularly if generated using non-renewable resources, is a major contributor to air pollution and climate change. Social norm feedback, whereby a household's energy use is compared with that of their neighbours or similar households, has been shown to decrease energy use in several contexts (35), though cultural factors and values moderate the effect (36).

A large randomized controlled trial in the Republic of Moldova found that a one-time letter sent to people with above-average energy use resulted in a 1.7–2.1% decrease in energy consumption compared with households who did not receive a letter. This change was sustained for at least three months. The letters included a comparison of the household's energy use with that of an average energy-efficient neighbour and included tips on how to decrease use. The researchers also tested variations and found that letters using kilowatt hours and letters using monetary values were similarly effective (37).



## CASE STUDY 5:

### Green defaults increase renewable energy choices

Household energy consumption is a major contributor to climate change, but this can be decreased with the use of green energy. Although green energy is widely available, choosing an energy provider is complicated and the different options are difficult to navigate. BCI research suggests that people tend to stick with a default choice partially because it is the easiest option and because they see it as the recommended option (44). In line with the Swiss energy strategy, green energy suppliers defaulted their customers into a green energy package, with the option to switch to a

conventional if they choose to do so (45). This replaced the existing system where people had to actively choose between conventional and renewable energy.

Presenting green energy as the standard option resulted in 80% of households and businesses opting to stay with this package, despite the green choice being more expensive. The benefits lasted throughout the four years of the research study. If this default policy were implemented in a country like Germany, it would save an estimated 45 million tons of CO<sub>2</sub> a year in household consumption alone (45).

#### **Consideration 5: Use BCI to tackle misinformation and science denialism about climate change and the environment**

One challenge in EH-related debates is misinformation and denial of scientific consensus, including the detrimental human impact on climate and the environment. Since it is often harder to communicate facts than false claims, tackling mis- and disinformation to ensure that accurate information is easily understood and recalled requires concerted effort (46).

Behavioural science, which helps to reveal the biases of the human mind and how individuals respond to information, has demonstrated the importance of avoiding scientific and technical jargon, and of using clear graphs, videos and photos to communicate corrective messages and complex or statistical information. On social media, users can be mobilized to respond quickly to misinformation by sharing facts (46).

For spokespeople facing science deniers in a public debate, evidence-based approaches include unmasking the techniques used by the science denier, focusing on key and well evidenced information, and focusing on positive messaging (47,48).





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Because of the important links between the triple planetary crisis and health outcomes, health-care practices offer a promising area for testing BCI-informed sustainability interventions.

**Consideration 6: Use BCI to address EH-related behaviours within the health system**

While health care treats the harms caused by environmental damage, it also contributes to problems such as pollution and climate change; for example, health-care delivery generates 4–5% of global greenhouse gas emissions (49–52). More sustainable health-care practices can benefit the environment and decrease health-care costs (53), and health-care workers have expressed an interest in greener options, such as sustainable food services (54).

Previous studies have found that behaviour change interventions can reduce carbon emissions associated with anaesthesia and unnecessary tests (55). Similar strategies are needed to decrease the estimated 27.5 million tonnes of carbon emissions associated with 350 000 registered clinical trials (56,57). Because of the important links between the triple planetary crisis and health outcomes, health-care practices offer a promising area for testing BCI-informed sustainability interventions.



**CASE STUDY 6:**

**Increasing vegetarian meal options leads to more sustainable food choices**

Although many people are motivated to eat more vegetarian meals for both environmental and health reasons, choices are often limited in restaurants and canteens. In three university canteens in the United Kingdom, the number of vegetarian meal choices was increased in a year-long series of observational and experimental field studies (58).

Doubling the proportion of vegetarian options (for example, from one out of four meal options to two out of four options), was found to increase people’s selection of vegetarian meals by 40.8–78.8% in the three canteens. The greatest effect was seen in the canteens which had the fewest vegetarian meal options to begin with (58).

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The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

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WHO/EURO:2024-9205-48977-72979

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