POSITION PAPER

The role of social marketing in achieving the planet sustainable development goals (SDGs)

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Abstract

Changing the way citizens behave toward sustainability is essential to achieve the SDGs. Citizens can help create a more prosperous planet for future generations by making sustainable decisions and engaging in environmentally friendly behaviors. This position paper draws attention to how social marketing can encourage pro-environmental behavior conducive to achieving the environmental Sustainable Development Goals (SDGs) set by the United Nations (UN) as part of the 2030 Agenda. The paper also offers critical analysis of earlier studies employing a social marketing approach to influence participants' behavior in favor of environmental sustainability. Recommendations for social marketing practitioners and researchers are provided. These recommendations center on two issues: how to develop and implement successful environmental social marketing programs and how to use communication more effectively.

Keywords Social marketing · Sustainable development goals (SDGs) · Pro-environmental behavior · Interventions · Communication

1 Introduction

Environmental goals are central to the United Nations 2030 Agenda for Sustainable Development (UN, s.d.). Together these environmental goals form the Planet dimension of the 2030 Agenda. For example, one of the 17 Sustainable Development Goals (SDGs), Goal 13, calls for swift action to mitigate the effects of climate change. SDG 13 covers a broad range of issues, but its primary objective is to reduce global greenhouse gas emissions and increase climate resilience and adaptation. Antonio Guterres, the UN Secretary-General, offered a warning for world leaders at COP27

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in 2022: "We are on a highway to climate hell with our foot on the accelerator. Our planet is fast approaching tipping points that will make climate chaos irreversible. We need urgent climate action." Climate change and its consequences together represent one of the greatest challenges facing humanity today. Consumption patterns play a key role in this regard (Escario et al., 2020). For instance, according to Eurostat (2022), after the consumer goods industry (23%) and the energy sector (19%), households are the third-biggest emitter of greenhouse gases (17%) in Europe, followed by transport and storage (14%) and agriculture (13%).

Long-term changes in consumer habits, lifestyle choices, and human behavior will all have an impact on how households affect the environment. In fact, Goal 12 aims to ensure that people adopt sustainable patterns of production and consumption, including reducing the use of natural resources, using resources efficiently, minimizing waste and pollution, and living sustainable lifestyles. Despite the effects of individual behavior on climate change, many people underestimate their power to stop it. Instead, they place the burden of responsibility solely on the shoulders of governments and private enterprise (Wells et al., 2011). This dynamic must change. Of course, citizens must demand environmentally responsible behavior from public and private organizations. However, citizens themselves must behave pro-environmentally to achieve a sustainable future for all and meet the SDGs.

This paper highlights the role of social marketing in promoting individual pro-environmental behavior that can help achieve the Planet SDGs. The paper also offers critical analysis of previous social marketing research on how to achieve changes in environmentally responsible behavior. Recommendations for social marketing researchers and practitioners are provided. Guidance is offered on how to create and implement effective environmental social marketing programs at the individual level, as well as how to use communication more persuasively.

1.1 Can social marketing help in the quest to achieve the environmental SDGs?

To achieve the environmental SDGs, citizens must behave pro-environmentally. Pro-environmental behavior is "behavior that seeks to protect the environment or harm it as little as possible" (Steg & Vlek, 2009, p. 309). Examples of pro-environmental behavior include energy conservation, water conservation, recycling, and sustainable transport. Several strategies can be adopted to promote environmentally responsible behaviors by citizens. Traditionally, regulation and information-intensive campaigns have been the most common strategies used in relation to the environment (Jackson, 2005; Rothschild, 1999). As discussed later, social marketing can complement these two strategies by overcoming some of their drawbacks.

Legislation (or regulation) often promotes socially responsible behavior in citizens through the threat of punishment for non-compliance in the form of, say, fines (Kennedy, 2010). Therefore, it is coercive rather than voluntary, attempting to control human behavior (Geiger et al., 2021). Research has shown the mixed effectiveness and unintended consequences of using bans and levies. For example, Mathew et al. (2023) reported that these initiatives in the case of single-use plastic reduction can decrease individuals' intrinsic motivation, leading to a greater probability of negative community reactions and negative spillover effects. Therefore, while coercive

efforts undoubtedly change behavior in the short-term, less controlling approaches to behavior change are also needed. For instance, autonomy-preserving interventions based on voluntary behavior change could provide a valuable alternative. Social marketing interventions offer just such an approach. In social marketing, effective behavioral interventions begin by analyzing the benefits and barriers (internal or external) that people perceive when performing a specific activity. The aim of this analysis is to overcome barriers and increase benefits to achieve voluntary long-term change (Andreasen, 1994, 2002). This approach gives individuals a greater feeling of autonomy and greater intrinsic motivation than approaches based on controlled motivation (Geiger et al., 2021).

Research has shown that information-intensive environmental campaigns are useful to increase pro-environmental attitudes but that information alone does not generally lead to behavior change (Liu et al., 2020). There are several reasons why information-intensive campaigns have failed to change individual pro-environmental behavior (see Jackson, 2005). These failures highlight the areas where social marketing can add value. For example, individuals may lack knowledge or understanding to translate information into action. Social marketing addresses the reasons for this gap and can offer specific tools for each barrier and action. One example of how social marketing works in this way is by simplifying complex information and presenting it in a manner that can be easily understood by specific segments of the population (Sewak et al., 2021). Likewise, social marketing can provide individuals with specific steps or tips to help them tackle a complex issue (Schultz, 2014). Another reason why information-intensive campaigns fail is that individuals may be aware of the environmental consequences of their behavior but still choose not to change their behaviors because they have other priorities or values. Social marketing involves in-depth analysis of the factors that influence the adoption of pro-environmental behaviors (e.g., beliefs, social norms, values, self-efficacy, moral obligation, and problem awareness). This in-depth analysis provides a better understanding of possible barriers and the ways to overcome them. In this analysis of facilitators and obstacles that prevent the adoption of a desired behavior, social marketing also entails analysis of what or who may be influencing members of the target audience to act the way they do, for example in the form of competition (Andreasen, 2002). This analysis of the competition can take many forms, including similar programs or campaigns, other behaviors, products or services, or even messages. This competition analysis is crucial because it helps social marketers understand the strengths and weaknesses of their own programs in relation to those of their competitors. Armed with this information, social marketers can refine strategies, adjust messages, and identify opportunities for reaching and engaging with the target audience.

Social marketing can therefore offer an effective approach for the design and execution of environmental programs, which should contribute to the way governments and public administrations develop and choose public policies. Social marketing can also support the way services are provided and can create lasting relationships with citizens and other interested organizations (Tkaczynsk et al., 2020). Furthermore, social marketing researchers can make a major contribution by creating and experimentally evaluating useable strategies (interventions) to support the achievement of the environmental SDGs.

1.2 A critical view of the use of social marketing to promote pro-environmental behaviors in past studies and ideas for future directions
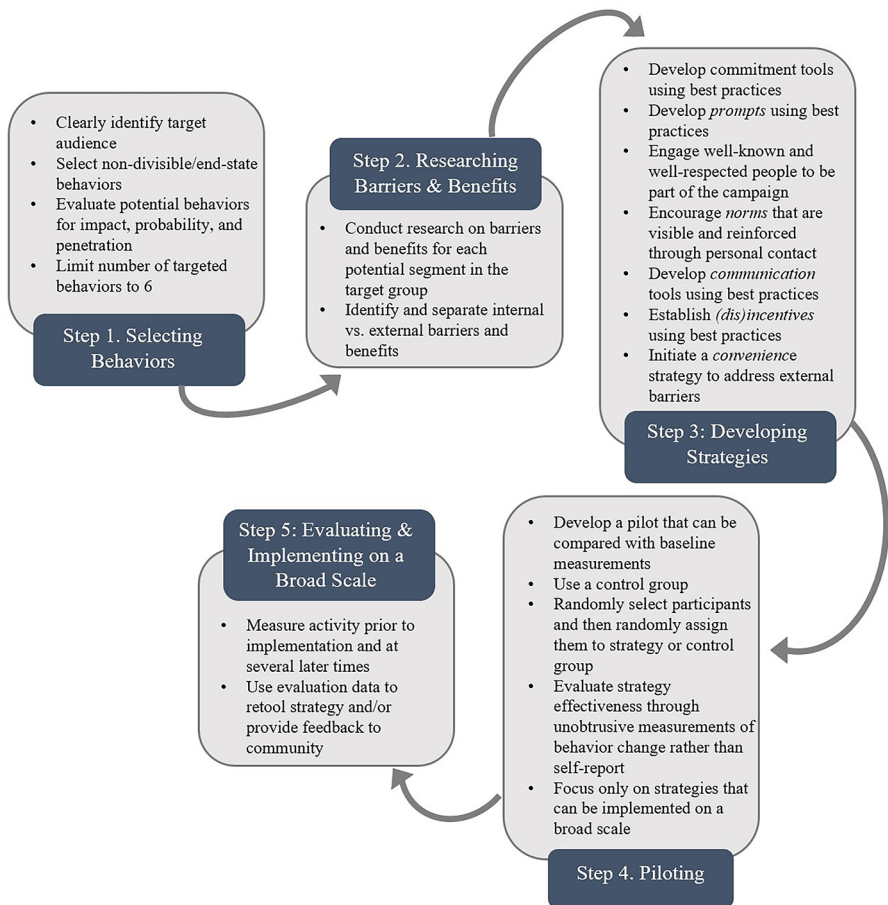
In social marketing, the community-based social marketing (CBSM) framework has commonly been used to design and deliver programs that foster pro-environmental behavior (McKenzie-Mohr, 2011)[1]. The CBSM framework has five steps (McKenzie-Mohr, 2011). The first consists of carefully selecting the behavior targeted by the program. This behavior should be non-divisible (i.e., it cannot be further divided) and an end-state behavior (i.e., it has a direct impact on the goal). Prior to selecting this behavior, the target audience should be established (segmentation). The second step is to identify the barriers and benefits of the chosen behavior. Barriers include factors that are internal and external to the individual that make it less likely to engage in the desired behavior. Benefits refer to the positive outcomes associated with the behavior. In step three, a strategy is designed based on behavior-change tools (e.g., social norms, feedback, or prompts) to reduce or remove the analyzed barriers and increase benefits (see McKenzie-Mohr and Schultz, 2014; Schultz, 2014). Step four consists of testing the intervention with a small subset of the community. Finally, step five involves assessing the program's effects once it has been broadly implemented.

The CBSM framework has primarily been used by practitioners in citizen-centered programs at the community level to promote pro-environmental behaviors such as reducing waste, protecting the habitats of fish and wildlife, and reducing water use.[2] However, most of these programs do not fully apply the concepts and principles of social marketing, especially in terms of benchmark criteria (Tkaczynski et al., 2020). This feature is also true of many academic studies (Rodriguez-Sanchez et al., 2023). According to past evidence, assessing the extent of criteria used in social marketing programs is important because interventions are more likely to result in positive behavior change when more criteria are used and properly reported (Tkaczynski et al., 2020). Lynes et al. (2014) and Fries et al. (2020) proposed several benchmark criteria (see Fig. 1) based on the CBSM framework and the six benchmarks listed by Andreasen (2002). From the perspective of these benchmark criteria, these programs could be improved and made more effective.

For example, regarding behavior selection (first step of CBSM benchmark criteria analysis), many studies fail to identify the target audience (e.g., Frame and Newton, 2007) or do not choose non-divisible behaviors (e.g., Gray and Bean, 2011). Similarly, concerning the identification of barriers and benefits (second step of CBSM benchmark criteria analysis), even though many studies examine the barriers and benefits of the chosen behavior, very few distinguish between internal and external factors (e.g., Miller et al., 2009). Finally, concerning the evaluation of the broad-scale implementation of the intervention (fifth step of CBSM benchmark criteria analysis), very few studies measure the behavior before and after the implementa-

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[1] As noted by Schultz (2014, p. 109), "The approach is 'community-based' because it focuses on a group of individuals who share a common connection. Typically, the common connection is geographic, but it could also include social networks, peer groups, a workplace, or even larger regions like a city, offices within a multinational corporation, or apartment complexes within an electric utility service area."

[2] See for example: https://toolsofchange.com/en/home/.

- Clearly identify target audience
- Select non-divisible/end-state behaviors
- Evaluate potential behaviors for impact, probability, and penetration
- Limit number of targeted behaviors to 6

Step 1. Selecting Behaviors

Step 2. Researching Barriers & Benefits

- Conduct research on barriers and benefits for each potential segment in the target group
- Identify and separate internal vs. external barriers and benefits

- Develop commitment tools using best practices
- Develop *prompts* using best practices
- Engage well-known and well-respected people to be part of the campaign
- Encourage *norms* that are visible and reinforced through personal contact
- Develop *communication* tools using best practices
- Establish *(dis)incentives* using best practices
- Initiate a *convenience* strategy to address external barriers

Step 3: Developing Strategies

Step 5: Evaluating & Implementing on a Broad Scale

- Measure activity prior to implementation and at several later times
- Use evaluation data to retool strategy and/or provide feedback to community

- Develop a pilot that can be compared with baseline measurements
- Use a control group
- Randomly select participants and then randomly assign them to strategy or control group
- Evaluate strategy effectiveness through unobtrusive measurements of behavior change rather than self-report
- Focus only on strategies that can be implemented on a broad scale

Step 4. Piloting

Fig. 1 CBSM benchmark criteria analysis
Source: Authors based on Lynes et al. (2014) and Fries et al. (2020)

tion (e.g., Mulcahy et al., 2020) or provide evaluation data to give feedback to the community (e.g., Velde et al., 2018). Therefore, although the CBSM framework, and more specifically the benchmark criteria, offers a potentially effective tool for the design, implementation, and evaluation of social marketing programs to achieve pro-environmental behavior, very few programs fully implement it. Hence, to date, it is an underused tool.

Furthermore, two key issues should be addressed in environmental social marketing programs. These issues, which relate to two CBSM framework steps, are as follows: (1) ensuring better use of formative research and theory for the analysis of the determinants (barriers and benefits) of the target behavior (Step 2), and (2) making more effective use of communication as a behavior change strategy (Step 3).

1.3 Formative research and theory

Formative research and theory are the two basic methods in the second step of the CBSM framework. Traditional research techniques such as surveys and focus groups are the most common methods in formative research for examining factors associated with the desired behavior as well as the effectiveness of the strategies used in programs (Carins et al., 2016). However, although these techniques have some advantages such as fast data collection and low cost, they also have major disadvantages. For example, social desirability bias becomes an issue when participants must answer questions about the environment (Vesely & Klöckner, 2020). Recent studies have also highlighted limitations in objectively capturing the cognitive and emotional processing of environment-related messages (Lange & Dewitte, 2019). Thus, instead of focusing only on traditionally methods and research pathways such as surveys or focus groups, social marketers must be open to alternative ways of conducting research. The book "*Expanding the Formative Research Toolkit*" by Kubacki and Rundle-Thiele (2017) is useful in this regard. In addition to traditional research methods, they propose the use of innovative techniques such as big data, consumer diaries, mechanical observation, and cognitive neuroscience in social marketing.

Applying tools and knowledge from cognitive neuroscience to consumer behavior (i.e., consumer neuroscience) can be useful in formative research because doing so can provide accurate information on cognitive and emotional processing of messages and decision making (Kapoor et al., 2023). Furthermore, methods from neuroscience (e.g., fMRI) can explain the neural mechanisms that determine how persuasively messages promoting pro-environmental behavior are conveyed (Casado-Aranda et al., 2018). As indicated by Gordon and Ciorciari (2017), in relation to social marketing, these neuroscience tools can be used to complement traditional research techniques and thus provide deeper insight into human behavior. Gordon and Ciorciari (2017) also suggest that cognitive neuroscience can be used for formative research in social marketing and for pretesting of marketing tools (pretesting research) for subsequent social marketing interventions (e.g., advertising, videos, and brochures).

Regarding the use of theory, many CBSM interventions fail in the application of theory to plan social marketing programs (Hübscher et al., 2022). Environmental and social psychology can play a key role in providing theoretical models to explain a certain behavior by shedding light on the underlying psychological, social, cultural, and contextual factors that influence that behavior[3]. Given the paucity of formal academic research on CBSM, much work is needed to integrate academic theory into this model to make environmental social marketing programs more effective. This theoretical approach can help explain how individuals think and feel and can lead to the adoption of a broader perspective in the analysis of the systems that surround people. Thus, a theory-based approach is especially important when analyzing the barriers and benefits of a selected behavior and designing a strategy for behavior change

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[3] See Stern (2018), Steg and de Groot (2018), and Bell and MacGregor (2020) for more details on theories and models from consumer psychology, applied social psychology, and environmental psychology for promoting pro-environmental behavior.

(Van Hierden et al., 2022)[4]. A widely used theory in environmental psychology, and one that seems promising in the area of social marketing and the environment, is the goal-framing theory (do Canto et al., 2023; Rodriguez-Sanchez et al., 2022). This theoretical framework (Lindenberg & Steg, 2007) combines previous theories but offers major benefits with regard to behavior change because it is founded on the notion of the accomplishment of specific objectives. Goal-framing theory extends existing environmental psychology theories and models such as the norm activation model (Schwartz & Howard, 1981), the theory of planned behavior (Ajzen, 1991), the value-belief-norm model (Stern et al., 1999), and affect theory (e.g., Leiserowitz, 2005; Perugini and Bagozzi, 2001). It proposes that the path people follow to select, process, and act on information depends on how strongly they view the achievement of overall goals (Lindenberg & Steg, 2007). These overall goals can be divided into three categories: hedonic goals (to experience and feel better), gain goals (to keep or improve one's resources, such as money or status), and normative goals (to act in a proper and moral manner). Previous environmental psychology studies have investigated the effectiveness of deploying normative, hedonic, and gain-oriented messages to promote pro-environmental behavior. However, they fail to agree on what kind of frame is most effective (Chi et al., 2021), although it seems to depend on the consumption context. Therefore, applications of goal-framing theory in different contexts are required in the field of environmental social marketing.

1.4 Communication

Regarding the design of strategies and tools to promote pro-environmental behavior, communication is fundamental to inform, educate, and persuade a target population to modify its behaviors by influencing attitudes, values, and social conduct (Kidd et al., 2019). According to Bolderdijk et al. (2013, p. 413), "the way pro-environmental behavior is advertised in environmental campaigns may influence how people feel about compliance". Therefore, communication strategies should use persuasion techniques to encourage pro-environmental attitudes and behaviors (Martin et al., 2017). The knowledge deficit model, according to which individuals change their behavior simply by being informed about the issue, has been employed in most environmental social marketing communication campaigns (Kidd et al., 2019). However, the evidence suggests that this communication model is not persuasive enough (Kidd et al., 2019). Consumer response is not achieved using information alone. In fact, information overload can prevent an audience from reacting (Wells et al., 2011). Therefore, social marketers should focus on finding other communication frameworks (or frames) that are more effective than the knowledge deficit model (information-intensive campaigns). For example, recent research suggests that personal response efficacy (also known as perceived consumer effectiveness) may be a suitable frame to encourage individual pro-environmental behaviors (e.g., energy saving and recycling) because it focuses on the individual rather than diluting collective responsibility in terms of people or society (Chang, 2021). In addition, Florence et

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[4] Van Hierden et al. (2022) described how theory is applied to deliver a theory-informed well-being behavior change intervention.

al. (2022) conducted a systematic review of studies of message framing and environmental sustainability. They concluded that single frames do not consistently lead to more sustainable consumer behavior. Instead, employing two message frames results in greater effectiveness.

Persuasive technology should also be used in the communication of environmental social marketing programs to encourage environmentally friendly behavior and sustainable living. Persuasive technology can use large amounts of data (to access the right information at the right time). It provides anonymity, which is useful, for example, when addressing sensitive problems (Midden & Ham, 2018). It can also deliver believable experiences through a variety of interaction modalities. Examples of persuasive technology are audio, video, games and virtual worlds. In this sense, immersive technologies such as virtual reality (VR), augmented reality (AR), and mixed reality (MR) offer a sort of communication support that can have a bigger impact on behavior than conventional communication tools because they provide more dynamic and more sensory experiences (Baradaran Rahimi et al., 2022). These immersive technologies are changing the way people experience real and virtual environments (Hoyer et al., 2020). They provide novel avenues for information and communication (Rauschnabel et al., 2022). VR generates a 3D environment where a person can navigate and interact with existing objects through sensory simulation. VR thus provides total immersion and a feeling of psychological presence in an experience (Guttentag, 2010).

Environmental research based on the use of immersive technology in interventions has shown that this technology can be more effective at promoting pro-environmental attitudes than less immersive desktop interventions (e.g., Plechatá et al., 2022; Soliman et al., 2017). Although these technologies have developed substantially and their use has grown in recent years, few studies have examined their potential to influence people's behavior in social marketing and environmental behavior. The development of these technologies has led to the concept of the *metaverse*. This parallel virtual universe combines immersive technology with artificial intelligence to improve physical spaces, offer goods and services, and create a setting where users share in the process of value co-creation (Buhalis & Karatay, 2022). However, to understand the behavioral effects of experiencing virtual settings, further study is required.

Another relevant line of technology is serious games. These games are not intended to entertain but can play a prominent role in the process of informing, educating, and promoting behavior change in terms of environmental sustainability (Ong & Araral, 2022; Thomas-Walters & Veríssimo, 2022). According to studies, playing games can help people become more environmentally aware, foster eco-friendly attitudes, and encourage individuals to adopt pro-environmental behaviors (e.g., Dunn and Veríssimo, 2021; Orland et al., 2014). Games are able to do so because they provide a fun, engaging, and low-pressure environment where players can experiment with different actions and see the consequences of their choices. However, some empirical studies of serious games have found no significant impact on attitudes and behavior but a significant effect on learning (e.g., Thomas-Walters & Veríssimo, 2022). Thus, the advent of these persuasive technologies creates a new area for the research and application of social marketing programs that must be addressed in the near future.

2 Discussion and conclusions

Achieving the environmental SDGs requires citizens to behave pro-environmentally. The CBSM framework offers a potentially effective tool for this purpose by combining the practice and theory of social marketing. Another valuable feature is its focus on the in-depth study of how to overcome barriers and enhance benefits associated with the target behavior. This approach increases the likelihood that individuals voluntarily engage in pro-environmental behavior by making it attractive to them. However, most environmental social marketing programs that claim to use the CBSM framework in their design do not fully apply the principles of CBSM social marketing at either the academic or professional level. As a result, many programs do not have the expected impact, and their effectiveness is limited. This paper has analyzed and highlighted certain weaknesses in relation to three key points regarding the application of the CBSM framework in past environmental social marketing programs. This discussion can lead to lines of future research.

First, benchmark criteria should be used as a guide for environmental social marketing program design, implementation, and evaluation. Lynes et al. (2014) and Fries et al. (2020) proposed a set of benchmark criteria to be used when designing and implementing environmental social marketing programs. These benchmark criteria (see Fig. 1) should be used by social marketers as a practical guide to ensure that certain key points are met by the program (i.e., as a checklist). In general, effective pro-environmental behavior interventions should target specific behaviors and audiences, be based on adequate theoretical frameworks to overcome barriers and promote benefits, design specific strategies based on previous steps, design pilot studies, and evaluate the broad-scale implementation of the intervention (Fries et al., 2020; McKenzie-Mohr, 2011; Lynes et al., 2014). This guidance can address some authors' criticisms (e.g., Corner and Randall, 2011) of the lack of effectiveness of using social marketing to fight climate change because social marketing serves more as a framework for creating behavior change programs than as a way of modifying behavior on its own.

Second, new methods in formative research and new theories to understand the barriers and benefits of the target behavior should be used. Social marketers must be open to alternative research techniques besides traditional methods such as surveys and focus groups. The use of cognitive neuroscience in consumer behavior research, for instance, could provide more accurate data on cognitive and emotional processing and decision making. Such techniques are therefore useful for formative research and the pretesting of marketing tools for social marketing interventions. Meanwhile, the proponents of many environmental social marketing interventions fail to apply theory when planning a social marketing program. Environmental and social psychology can play a key role, providing theoretical models to explain the underlying factors that influence a desired behavior. Goal-framing theory offers a promising avenue in this sense.

Third, more persuasive communication tools should be embraced because the traditional knowledge deficit model, which relies solely on providing information, may not be enough to encourage environmentally friendly behaviors. Social marketers should employ other communication frameworks, such as the personal response

efficacy frame, and combine multiple message frames for greater effectiveness. In addition, persuasive technology, such as immersive technologies in the form of VR or serious games, offers new and exciting opportunities to encourage pro-environmental behavior. While such technologies have developed and have become increasingly common in recent years, more research is needed to understand their potential to influence people's actions in social marketing and pro-environmental behavior.

In conclusion, to meet the UN's environmental SDGs, citizens' behavior must change. Social marketing, and, more specifically, frameworks such as the CBSM, can be effective for the design, implementation, and evaluation of environmental programs aimed at promoting pro-environmental behaviors. However, if these programs are to be effective, they must be designed with due care and attention. They should be designed using as many benchmark criteria as possible and should pay special attention to two issues. First, when analyzing behavioral barriers and motivators, those responsible for the design of such programs must conduct in-depth analysis of the factors influencing behavior using new research methods and theory. Second, if communication is chosen as a tool for behavior change, it should be based on persuasive communication strategies (enabled by new technologies), and the communication messages should use persuasive communication frames. As a final remark, this article primarily focuses on the delivery of individual behavior change (downstream level). However, because climate change is a complex phenomenon that involves different agents, it is also important to consider stakeholder power structures (midstream level), system context complexity (upstream level), and their interrelationships.

Declarations

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