

# Fostering Sustainable Behavior

“ *That which is not good for the beehive  
cannot be good for the bees.*

**Marcus Aurelius**

**W**hen my wife and I moved to Fredericton, Canada we bought a composter for our backyard. During the first summer and fall in our new home we fed the composter diligently. However, by January a snow drift three feet deep stretched from our back door to the composter. I started off the month with good intentions, shoveling a pathway or trampling down the snow with a pair of winter boots that reached nearly to my knees, but by late January, when the temperature dropped to minus 30°F, I had had enough, and despite my good intentions, the organics ended up in the garbage can at the curbside.

My environmental transgressions extend beyond seasonal composting. While I was still teaching, I would bike to work during the spring, summer and fall. However, during the winter, which in Fredericton stretches from November through to early April, I would take a taxi. I knew that automobiles are a principal source of the carbon dioxide emissions that lead to global warming, so why didn't



## BEHAVIOR MATTERS

Behavior change is the cornerstone of sustainability. Whether you are working on protecting wetlands, enhancing water or energy efficiency, altering modal transportation choices, or any of the myriad of other behaviors related to sustainability, behavior change matters. Changes in behavior not only directly affect our progress toward sustainability, but they can also powerfully affect how people view themselves.<sup>1</sup> For example, when people engage in actions that reduce CO<sub>2</sub> emissions, such as turning off their vehicle engines, they are likely to come to see themselves as the type of person who cares about climate change based upon their engagement in the behavior. These changes in how they view themselves can significantly affect their support for policy changes.

I walk to work or take the bus? To walk to work took approximately 30 minutes. While the exercise would have been good for me, I would rather have spent that time with my family. As for the bus, there was no direct bus route from our house to the university—making it slower to take the bus than to walk. Finally, the taxi cost only marginally more than bus fare, making it an even easier choice to take the taxi. While concerned about climate change, my behavior for six months of the year was inconsistent with my concern.

These two anecdotes illustrate the challenges faced in making our communities more sustainable. Composting can significantly reduce the municipal solid waste stream, but only if people elect to compost. Mass transit can reduce carbon dioxide emissions, and urban air pollution, but only if people leave their cars at home and take the bus or train instead. People play an equally critical role in many other sustainable activities. Programmable thermostats can reduce home heating costs and also carbon dioxide emissions, but only if people install and program them. Water efficient toilets and shower heads can significantly reduce residential water use, but only if people have them installed. The purchase of environmentally friendly products can significantly affect our environment, but once again, only if people elect to alter their purchase habits.

How important are changes in individual behavior? Thomas Dietz and his colleagues have estimated that it is possible to reduce total U.S. CO<sub>2</sub> emissions by 7.4% over the next ten years through programs that target residential energy use and nonbusiness travel.<sup>2</sup> Not only is this a significant reduction in emissions, but they also note that it can be obtained much more quickly than reductions in emissions through other means, such as building more fuel-efficient vehicles or transitioning to renewable energy, as these changes will take time to accomplish. This *behavioral wedge*, they argue, buys us time as we put in place policies that will significantly reduce future emissions.

Behavioral choices play an equally critical role in the commercial and agricultural sectors. In the commercial sector, day-to-day behaviors have a substantial impact upon emissions, energy and water use, and waste produced. Similarly, daily choices in the agricultural sector have significant impacts in a variety of areas, including CO<sub>2</sub> emissions and agricultural runoff.

## INFORMATION-BASED CAMPAIGNS

Most programs to foster sustainable behavior rely upon large-scale information campaigns. These campaigns are usually based on one of two perspectives regarding changing behavior. The first perspective, which is referred to as the *Attitude-Behavior* approach, assumes that changes in behavior are brought about by increasing public knowledge about an issue, such as climate change, and by fostering attitudes that are supportive of a desired activity, such as taking the bus rather than driving. Accordingly, programs based on this perspective attempt to alter behavior by providing information, through media advertising, and frequently the distribution of brochures, flyers and newsletters. The second perspective, which we will come to later, is referred to as the *Economic Self-Interest* approach.

## ATTITUDE-BEHAVIOR APPROACH

Is it warranted to believe that by enhancing knowledge, or altering attitudes, behavior will change? Apparently not. Numerous studies document that education alone often has little or no effect upon sustainable behavior. The following are examples:

- ▶ Scott Geller and his colleagues studied the impact that intensive workshops have upon residential energy conservation.<sup>3</sup> In these workshops, participants were exposed to three hours of educational material in a variety of formats (slide shows, lectures, etc.). All of the material had been designed to impress upon participants that it was possible to reduce home energy use significantly. Geller measured the impact of the workshops by testing participants' attitudes and beliefs prior to, and following, the workshops. Upon completing the workshop, attendees indicated greater awareness of energy issues, more appreciation for what could be done in their homes to reduce energy use, and a willingness to implement the changes that were advocated in the workshop. Despite these changes in awareness and attitudes, behavior did not change. In follow-up visits to the homes of the 40 workshop participants, only one had followed through on the recommendation to lower the hot water thermostat. Two participants had put insulating blankets around their hot water heaters, but they had done so prior to attending the workshop.



## BEYOND BROCHURES

Numerous studies document that education alone often has little or no effect upon sustainable behavior. As a consequence, programs that make use of information intensive approaches, such as bill-stuffers, flyers, and direct mail have very little likelihood of changing behavior.

In fact, the only difference between the 40 workshop participants and an equal number of non-participants was in the installation of water-efficient shower heads. Eight of the 40 participants had installed them, while two of the non-participants had. However, the installation of the water-efficient shower heads was not due to education alone. Each of the workshop participants had been given a *free* water-efficient shower head to install.

- ▶ A study conducted in the Netherlands revealed that providing households with information about energy conservation did not reduce energy use.<sup>4</sup>
- ▶ High school students who received a six-day workshop that focused on creating awareness of environmental issues were found, in a two-month follow-up, to be no more likely to have engaged in pro-environmental actions.<sup>5</sup>
- ▶ Households who volunteered to participate in a ten-week study of water-use received a state-of-the-art handbook on water efficiency. The handbook described wasteful water-use, explained the relationship between water-use and energy consumption, and detailed methods for conserving water in the home. Despite great attention being paid to the preparation of the handbook, it was found to have no impact upon consumption.<sup>6</sup>
- ▶ Canada's national effort to reduce CO<sub>2</sub> emissions in the residential sector, the One-Tonne Challenge, relied heavily on media advertising. An audit of its effectiveness indicated that 51% of Canadians knew of the program, but few changed their behavior.<sup>7</sup>

The above studies document that information campaigns that emphasize enhancing knowledge or altering attitudes frequently have little or no effect upon behavior. The following studies provide further evidence of the ineffectiveness of this approach. If increasing knowledge and altering attitudes result in behavior change, we should expect measures of attitudes and knowledge to be closely associated

with behavior. As shown below, however, there is often little or no relationship between attitudes and/or knowledge, and behavior.

- ▶ A survey of participants in a voluntary auto-emissions inspection program revealed that they did not differ in their attitudes toward, or knowledge regarding, air pollution compared to a random sample of individuals who had not had their car inspected.<sup>8</sup>
- ▶ When some 500 people were interviewed and asked about personal responsibility for picking up litter, 94% acknowledged that individuals bore a responsibility for picking up litter. However, when leaving the interview, only 2% picked up litter that had been *planted* by the researcher.<sup>9</sup>
- ▶ Two large surveys of Swiss respondents found that environmental information, knowledge and awareness were poorly associated with environmental behavior.<sup>10</sup>
- ▶ In one study, individuals who held attitudes that were strongly supportive of energy conservation were found to be no more likely to conserve energy.<sup>11</sup>
- ▶ An investigation of differences between recyclers and non-recyclers found that they did not differ in their attitudes toward recycling.<sup>12</sup>

While environmental attitudes and knowledge have been found to be related to behavior, as the above examples demonstrate the relationship is frequently weak or nonexistent. Why would attitudes and knowledge not be more strongly related to behavior? Consider the two anecdotes with which I began this chapter. I have attitudes that are supportive of both composting and alternative transportation. Further, I am relatively knowledgeable on both of these topics. Nevertheless, in both cases another factor—inconvenience brought on by winter—moderated whether my attitudes and knowledge were predictive of my behavior. In short, a variety of barriers can deter individuals from engaging in a sustainable behavior. Lack of knowledge and unsupportive attitudes are only two of these barriers.



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### INFORMATION'S ROLE

Programs that are strictly information-based have little likelihood of substantively changing behavior. Nonetheless, this does not mean that providing information should not be a component of a behavior change program, only that by itself information is unlikely to be effective. The critical question to ask is, "How does providing information address barriers to a target audience engaging in the behavior I wish to encourage?"



## BEYOND ECONOMICS

Economic incentives can increase motivation for someone to adopt a sustainable behavior, but it does not address the barriers to the behavior being adopted. For example, a rebate on purchasing a programmable thermostat might increase the number of people who purchase these thermostats, but it does nothing to address the barriers to installing the thermostat or programming it.

## ECONOMIC SELF-INTEREST APPROACH

The second perspective assumes that individuals systematically evaluate choices, such as whether to install additional insulation to an attic or purchase a high efficiency showerhead, and then act in accordance with their economic self-interest. This perspective suggests that in order to affect these decisions, an organization, such as a utility, need only provide information to the public that something is in their financial best interest and consequently the public will behave accordingly. However, as with information campaigns that focus on altering knowledge and attitudes, efforts that have concentrated on underscoring the financial advantages of a sustainable activity, such as installing a low-flow shower head or adding insulation, have also been largely unsuccessful. Here are two examples:

- ▶ Annually, California utilities spend 200 million dollars on advertising to encourage energy conservation. These advertisements encourage householders to install energy-conserving devices and adopt habits, such as closing the blinds during the day, that will decrease energy use. Despite massive expenditures, these campaigns have had little effect on energy use.<sup>13</sup>
- ▶ An act passed by the United States Congress brought into being the Residential Conservation Service (RCS). The RCS mandated that major gas and electric utilities in the United States provide homeowners with audits in order to enhance energy efficiency. In addition, homeowners had access to interest-free or low-cost loans and a listing of local contractors and suppliers. In total, 5.6% of eligible households requested that an RCS assessor evaluate their home.<sup>14</sup> Of those who had their home evaluated, 50% took steps to enhance the energy efficiency of their dwelling, compared to 30% for non-participants (the non-participants were households who were on the waiting list to have their homes assessed).<sup>15</sup> What types of actions were taken? In general, the actions were inexpensive and did not involve a contractor. Frequent energy-efficiency actions included caulking, weather-stripping, installing programmable thermostats, turning down the hot water thermostat, and installing a water heater blanket. These actions reduced energy use per

household between 2% and 3%.<sup>16</sup> Given that millions of dollars were spent on the RCS, and that it is possible to reduce residential energy use often by more than 20%, an initiative that produces annual savings of 2-3% can only be seen as a failure.

Why did such a comprehensive program fail? In large part the RCS failed because it did not pay adequate attention to the *human* side of promoting more sustainable energy use. Those who designed this massive initiative assumed that homeowners would retrofit their homes if it was clear that it was in their financial best interest to do so. While this economic perspective does consider the human side of sustainable behavior, it does so in a very simplistic way. As a United States National Research Council study concluded, this view of human behavior overlooks "...the rich mixture of cultural practices, social interactions, and human feelings that influence the behavior of individuals, social groups, and institutions."<sup>17</sup>

#### **THE EFFECT OF INFORMATION CAMPAIGNS**

Information campaigns proliferate because it is relatively easy to distribute printed materials or air radio or television advertising.<sup>18</sup> Advertising, however, is often an extremely expensive way of reaching people. In one distressing case, a California utility spent more money on advertising the benefits of installing insulation in low-income housing than it would have cost to upgrade the insulation in the targeted houses.<sup>19</sup> As Mark Costanzo points out, "Although advertising is an important tool for creating awareness, it is wasteful to invest most of our efforts in an influence strategy that has such a low probability of success."<sup>20</sup> The failure of mass media campaigns to foster sustainable behavior is due in part to the poor design of the messages, but more importantly to an underestimation of the difficulty of changing behavior.<sup>21</sup> Costanzo and his colleagues note that most mass media efforts to promote sustainable behavior are based on traditional marketing techniques in which the sustainable activity is viewed as a "product" to be sold. Advertising, they note, is effective in altering our preference to purchase one brand over another. However, altering consumer preferences is not creating new behavior, rather it involves altering an existing behavior. As they

indicate, “These small changes in behavior generally require little expense or effort and no dramatic change in lifestyle” (p. 526). In contrast, encouraging individuals to engage in a new activity, such as walking or biking to work, is much more complex. A variety of barriers to walking or biking to work exist, such as concerns over time, safety, weather, and convenience. The diversity of barriers which exist for any sustainable activity means that information campaigns alone will rarely bring about behavior change.

To date, too little attention has been paid to ensuring that the programs we implement have a high likelihood of actually changing behavior. The cornerstone of sustainability is delivering programs that are effective in changing people’s behavior. If we are to make the transition to a sustainable future gracefully, we must concern ourselves with what leads individuals to engage in behavior that collectively is sustainable, and design our programs accordingly.

#### **AN ALTERNATIVE: COMMUNITY-BASED SOCIAL MARKETING**

Community-based social marketing is an attractive alternative to information-intensive campaigns. In contrast to conventional approaches, community-based social marketing has been shown to be very effective at bringing about behavior change. Its effectiveness is due to its pragmatic approach. This approach involves: carefully selecting the behavior to be promoted; identifying the barriers and benefits associated with the selected behavior; designing a strategy that utilizes behavior-change tools to address these barriers and benefits; piloting the strategy with a small segment of a community; and, finally; evaluating the impact of the program once it has been implemented broadly.

► **STEP 1: SELECTING BEHAVIORS:** Whether the purpose of campaign is to reduce waste, enhance energy or water efficiency, alter transportation choices, protect a watershed or reduce CO<sub>2</sub> emissions, there are nearly always a wide array of behaviors that may be promoted. For example, if the purpose was to reduce residential energy use, this goal might be achieved by encouraging the installation of insulation in an attic, installing and setting a programmable thermostat or taking shorter showers. Similarly, there are numerous behaviors that could be



encouraged related to water use, transportation, waste reduction, etc. The first step of community-based social marketing is to determine which of these behaviors should be promoted.

► **STEP 2: IDENTIFYING BARRIERS AND BENEFITS:** If any form of sustainable behavior is to be widely adopted, barriers that impede people from engaging in the activity must first be identified along with what would motivate them to act. Community-based social marketers begin by identifying these barriers and benefits using a combination of literature reviews, observations, focus groups, and survey research. The barriers they identify may be internal to the individual, such as lack of knowledge regarding how to carry out an activity (e.g., composting), or external, as in structural changes that need to be made in order for the behavior to be more convenient (e.g., organizing carpooling amongst employees).<sup>22</sup> Community-based social marketers recognize that there may be multiple internal and external barriers to widespread participation in any form of sustainable behavior and that these barriers will vary for different individuals. For example, personal safety is more likely to be a concern to women as they consider using mass transit than it is for men. In contrast to the *Attitude-Behavior* and *Economic Self-Interest* perspectives just discussed, community-based social marketers attempt to remove as many of these barriers as possible. Social science research indicates that the barriers that prevent individuals from engaging in one form of sustainable behavior, such as adding insulation to an attic, often have little in common with the barriers that keep individuals from engaging in other forms of sustainable behavior, such as carpooling.<sup>23</sup> Further, this research demonstrates that even within a class of sustainable activities, such as waste reduction, very different barriers emerge as being important.<sup>24</sup> For example, different barriers exist for recycling, composting, or source reduction. Since the barriers that prevent individuals from engaging in sustainable behavior are activity-specific, community-based social marketers begin to develop a strategy only after they have identified a particular activity's barriers and benefits. Once these barriers and benefits have been identified, they develop a social marketing strategy to remove the barriers and enhance the benefits.



## BUILDING SUPPORT

Barriers exist not just to behaviors we wish to promote, but also to the very use of community-based social marketing. This approach is often a dramatic departure for organizations that are used to delivering information-intensive campaigns. Building support within an agency for utilizing community-based social marketing is discussed in the last chapter of this book.

► **STEP 3: DEVELOPING STRATEGIES:** Social science research has identified a variety of “tools” that are effective in changing behavior. These tools include approaches such as gaining a commitment from an individual that they will try a new activity, such as biking to work, or developing community norms that encourage people to behave more sustainably. The techniques that are used by community-based social marketers are carried out at the community level and frequently involve direct personal contact. Personal contact is emphasized because social science research indicates that we are most likely to change our behavior in response to direct appeals from others.

► **STEP 4: PILOTING:** Prior to implementing a community-based social marketing strategy, it is piloted in a small portion of a community. Given the high cost of implementing many programs, it is essential to know that a strategy will work before it is implemented on a large scale. Conducting a pilot allows a program to be refined until it is effective. Further, a pilot allows other possible methods for carrying out a project to be tested against one another and the most cost-effective method to be determined. Finally, conducting a pilot can be a crucial step in demonstrating to funders the worthiness of implementing a program on a broad scale.



## PILOTING

Frequently programs are not pilot-tested prior to be implementing broadly. Without conducting a pilot we cannot be confident that the program will change behavior or do so cost-effectively.

► **STEP 5: BROAD-SCALE IMPLEMENTATION AND EVALUATION:** The final step of community-based social marketing involves ongoing evaluation of a program once it has been implemented in a community. In conducting an evaluation, community-based social marketers emphasize the direct measurement of behavior-change over less direct measures such as self-reports or increases in awareness. The information gleaned from evaluation can be used to refine the marketing strategy further as well as provide evidence that a project should receive further funding.

The following chapters detail the five steps of community-based social marketing. After reading these chapters, you will have the information you need to create programs that can have a substantial impact on the adoption of sustainable behaviors in your community.