



# Climate Change Needs Behavior Change

Local solutions for a global challenge



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Finally, with admiration, we thank all the Solution Search entrants working tirelessly around the world for sharing their work with us.

# Foreword



**Katharine Wilkinson**

Vice President, Communication & Engagement, Drawdown

*What can I do? What should we do?* Within the context of the climate crisis, these simple questions can feel almost impossibly weighty. Yet they are the questions we must ask, as human beings alive on Earth in this unique and daunting moment.

Around the world, diverse individuals, initiatives, and institutions seem to be following the poet Rainer Maria Rilke’s advice: they are loving the questions themselves, and living their way into answers. Those answers include practices, technologies, platforms, and techniques that can move society away from causing the climate crisis to turning it around. When pooled together, an exciting picture of humanity’s collective wisdom and action begins to emerge.

Collecting proven solutions, and amplifying them, is the focus of both Solution Search and Project Drawdown. With so much good work underway, there is an opportunity to surface it and tell the story, such that discrete successes can be supported and scaled. The urgency of the climate crisis means we cannot afford to overlook solutions or that those solutions hinge on how and why we take them up.

That is why this year’s Solution Search honed in on areas where human behavior has a critical role to play in reaching drawdown—the point when greenhouse gas (GHG) levels in the atmosphere start to decline. Human beings are constantly eating, farming, moving, building, producing, consuming, and wasting. Solution Search entrants and finalists have found ways to make those activities less harmful or even net beneficial for the planet. Their work spans nearly 200 solutions, 47 countries, and many sectors and strategies, but is united by a shared commitment to a life-giving future for all.

This report is as much about human stories as it is about insights and tactics, because solutions are nothing without the committed “solutionaries” who move them forward. Interestingly, women emerged as critical actors in this year’s search. Both of the winners are women-led movements, and both focus on igniting the power of women’s voices, choices, and leadership—from Africa to Australia.

To be alive, awake, and aware on Earth today can feel utterly overwhelming; we are so small, in the face of problems so large. But it is also a magnificent thing to be here, now, in a moment that matters as much as this one does. Creating a livable future is our purpose as a species. Every individual and institution has an opportunity for action. These pages represent imaginative and inspiring efforts to seize it.

# A Note from the Partner Organizations



For every major environmental challenge we face today, people are both the problem and the solution. Climate change is no exception. Today, our consumptive behaviors—what we buy, what we eat and how we dispose of it—account for nearly two-thirds of global greenhouse gas emissions.<sup>1</sup> While we have begun to address many of these challenges with a combination of economic, policy and public awareness measures, climate change will require fundamental behavior change.

Changing behavior can be hard—but it is not impossible, nor is it trivial. People all over the world are already addressing climate change by changing their behaviors, from adopting more sustainable farming methods to choosing bikes over cars to get to work. To spark widespread change in the way people consume natural resources, we need to find the solutions that are already working and amplify them.

To pursue that goal, six of the world's leading conservation and development organizations joined forces to launch *Solution Search: Climate Change Needs Behavior Change*, a worldwide contest to find solutions that motivate widespread behavior change to fight climate change. For environmental challenges that affect the many, we must harness the power of the many.

Solution Search received applications from hundreds of promising environmental, conservation and sustainability initiatives from 47 countries on six continents; solutions that leverage what we know about human motivation and decision-making to transform unsustainable behaviors into climate-positive actions. To inspire people to change, we need to amplify and replicate these innovative solutions that use the power of emotional appeals, social influences and choice architecture as expertly as we apply economics and policy.

Our collective ambition is rising to the scale of the challenge. We aim to inspire individuals, communities and nations to join a movement where we all make smarter, climate-positive decisions. We still need global political action to avert the worst outcomes of climate change. But a comprehensive effort to combat climate change must also harness the power of the crowd. We can all make a change today that will help ensure the health and well-being of our planet for years to come.

1. Ivanova, D., Stadler, K., Steen-Olsen, K., Wood, R., Vita, G., Tukker, A., & Hertwich, E. G. (2016). Environmental impact assessment of household consumption. *Journal of Industrial Ecology*, 20(3), 526-536.



# The Promise of Solution Search



Solutions at the local level are vital to global action, but local solutions and the actors behind them often go unnoticed. Solution Search exists to spotlight local “bright spot” initiatives already solving challenging environmental issues. It finds and showcases what is already working, so that it can be replicated, and provides ongoing support to finalists, so that their solutions can be scaled. Past Solution Searches have covered issue areas such as climate adaptation, sustainable coastal fisheries and biodiversity-friendly agriculture.

This year, the Solution Search partners turned our lens on climate mitigation. We scanned the globe to find proven and promising solutions that are using behavioral strategies to motivate individuals and communities to adopt climate-friendly behaviors and reduce greenhouse gas emissions.

## Climate Change Needs Behavior Change



### EMOTIONAL APPEALS

Climate change affects nearly every aspect of our lives and work. Tackling it involves fundamentally changing how we interact with natural and built environments: from how we design and power cities to how we produce goods, grow and consume food, and use natural resources. All of these activities involve our behaviors and decisions. Individual behavior change is therefore a crucial component of effectively reducing the emissions we produce through our work, travel, and lifestyles.



### SOCIAL INFLUENCES

Last year, Rare, a Solution Search partner organization, published a piece on the importance of behavior-based solutions for climate change mitigation called *Climate Change Needs Behavior Change: Making the Case for Behavioral Solutions to Reduce Global Warming*. The report assessed the *Project Drawdown* list of the 80 most substantive solutions to address global warming and found that 30 of their solutions relied on behavioral components. The goal of this year’s Solution Search was to find examples of innovative solutions that are already applying behavioral strategies to address climate change.



### CHOICE ARCHITECTURE

From the last few decades of behavioral science, we know that people are not always rational decision-makers. We are social, emotional, and predictably non-rational, and these traits can be harnessed in savvy ways for good. This year’s Solution Search entrants put behavioral science principles into action, utilizing three key categories of behavioral strategies—emotional appeals, social influences, and choice architecture—to change behaviors in their communities.

We are proud to share the results of this year’s Solution Search and the insights from these bright-spot solutions, so that we can learn from and multiply them.

# A Call to Action: Project Drawdown

This year's Solution Search was inspired by the seminal book by Project Drawdown, aptly and ambitiously titled *Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming*. Based on rigorous research, the book describes 80 solutions to global climate change that are already actively in practice and can be dramatically scaled-up to reach drawdown - the point at which we reverse rather than just stabilize the amount of greenhouse gas in the atmosphere. Project Drawdown, like Solution Search, understands that communicating the problem is necessary but not sufficient to solving it. The next crucial step is to identify and promote tangible, actionable solutions.

The top solutions put forward by *Drawdown* are not always intuitive; even the authors were surprised by the solutions that made it to their top ten. Furthermore, the book's editor Paul Hawken has said that, "as researchers, we were and remain astonished at the impact individual solutions can have."<sup>2</sup> Though most of the rhetoric about tackling climate change focuses on policy, the Project Drawdown team found that actions at the individual level were often equally important.

In its ***Climate Change Needs Behavior Change report***, Rare's Center for Behavior & the Environment identified 30 out of 80 solutions from Drawdown that rely on individual behavior change. Rare's report then quantified the contribution of these 30 solutions to *Drawdown's* total estimate, and found that together they can help reduce about one-third of projected global emissions from 2020-2050. Four of these 30 solutions figure among Drawdown's top ten: reduced food waste, a plant-rich diet, silvopasture, and rooftop solar.

This year's Solution Search finalists and semi-finalists represent 28 of the 80 Drawdown solutions. Here is what they cover from the full Drawdown 80 and the Rare 30:

Carbon Impact Ranking		Solution
Drawdown	Rare	
2		Wind Turbines (Onshore)
3	1	Reduced Food Waste
4	2	Plant-Rich Diet
5		Tropical Forests
10	6	Rooftop Solar
11	8	Regenerative Agriculture
16	19	Conservation Agriculture
17	7	Tree Intercropping
19	10	Managed Grazing
21	13	Clean Cookstoves
23	9	Farmland Restoration
26	4	Electric Vehicles
31		Insulation
33	21	LED Lighting (Household)
37	11	Mass Transit
38		Forest Protection
46	23	Water Saving - Home
49	16	Cars
54	18	Walkable Cities
55	27	Household Recycling
57	24	Smart Thermostats
59	17	Bike Infrastructure
60	25	Composting
62		Women Smallholders
65	28	Nutrient Management
67	29	Farmland Irrigation
75	26	Ridesharing
80		Retrofitting

2. <https://e360.yale.edu/features/paul-hawken-on-one-hundred-solutions-to-the-climate-crisis>

# Contest Winners

Solution Search entrants go through multiple rounds of judging, including a technical round, to arrive at ten finalists. Our finalists are then judged by a high-level panel and by the public through online voting. We award two grand prizes: the Judges' Choice, awarded to the solution that receives the highest score from

our expert panel and the People's Choice, awarded to the solution that garners the most votes online. In addition, we award the Early Entrant prize to the best entry received within the first month of the competition.



## Solar Sister

USA, Nigeria, Tanzania, Uganda

Empowering women entrepreneurs with the tools to earn a livelihood by delivering life-transforming clean energy access to underserved communities.



## 1 Million Women

Australia

Growing a global social movement empowering women and girls to make lifestyle changes to reduce their carbon footprint.



## EcoChallenge, Northwest Earth Institute

USA

Gamifying community adoption of sustainable behaviors by allowing participants to join challenges and track their community's progress via an online platform.



# Finalists



## Behaviour Innovation

Australia

Inspiring sugar cane farmers to adopt sustainable farming practices that reduce water contamination and strengthen the climate resilience of the Great Barrier Reef.



## Better Buying Lab, World Resources Institute

United Kingdom

Sparking adoption of plant-rich diets by helping food-service providers rethink how they design menus and present food options.



## JouleBug

USA

Conquering the "I don't know where to begin" problem with a mobile application that helps users take simple actions throughout their day to make climate-friendly decisions, fueled by friendly competition and social sharing.



## Mediae Company

United Kingdom, Kenya

Using the power of media and storytelling to encourage adoption of clean, efficient, low-energy cookstoves.



## RASAI

Pakistan

Breaking down barriers to ride-sharing to reduce carbon emissions from cars, while offering affordable transportation options to commuters.



## The Kasiisi Project

USA, Uganda

Tapping into the potential of children to market and build fuel-efficient, low-emission cookstoves in order to inspire long-term adoption of sustainable behavior by their parents.



## University of Cambridge

United Kingdom

Restructuring the environments where food options are presented in order to encourage plant-based diets without the perception of limiting consumers' choice.





# Judges



**Charlotte Blank**

Chief Behavioral Officer,  
Maritz



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Senior Economist and  
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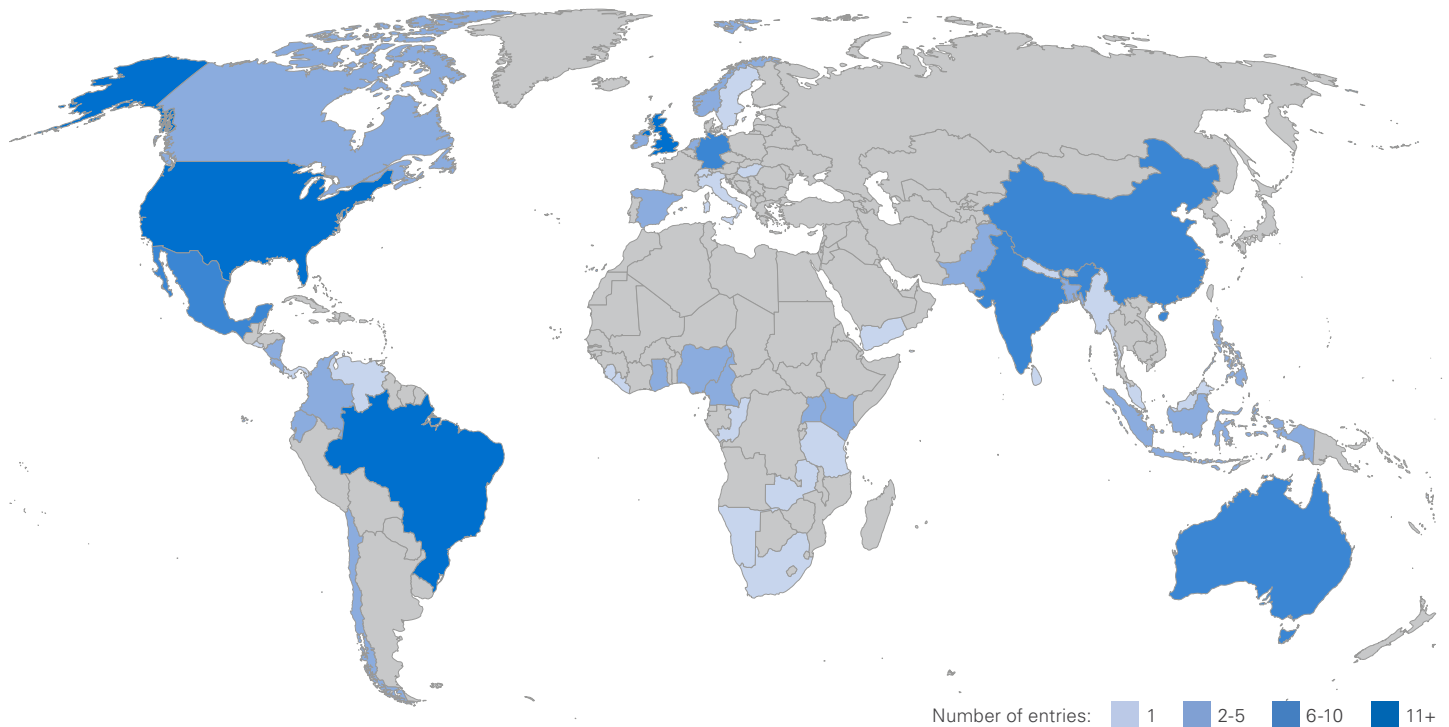
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Professor in Energy  
and the Environment;  
Professor of Psychology  
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# Technical Partners



# Solutions at a Glance



**197**  
solutions

**47**  
countries

**6**  
continents

This year's competition drew 197 entries from 47 countries spanning every continent except Antarctica.

Entries focused on a variety of climate-related issues, from reducing food waste, to promoting bicycling, to restoring forests. Many entries included a set of related activities, such as helping families tend kitchen gardens, harvest rainwater and use clean cookstoves, or supporting urban women to purchase sustainably, eat a plant-based diet and reduce energy use.

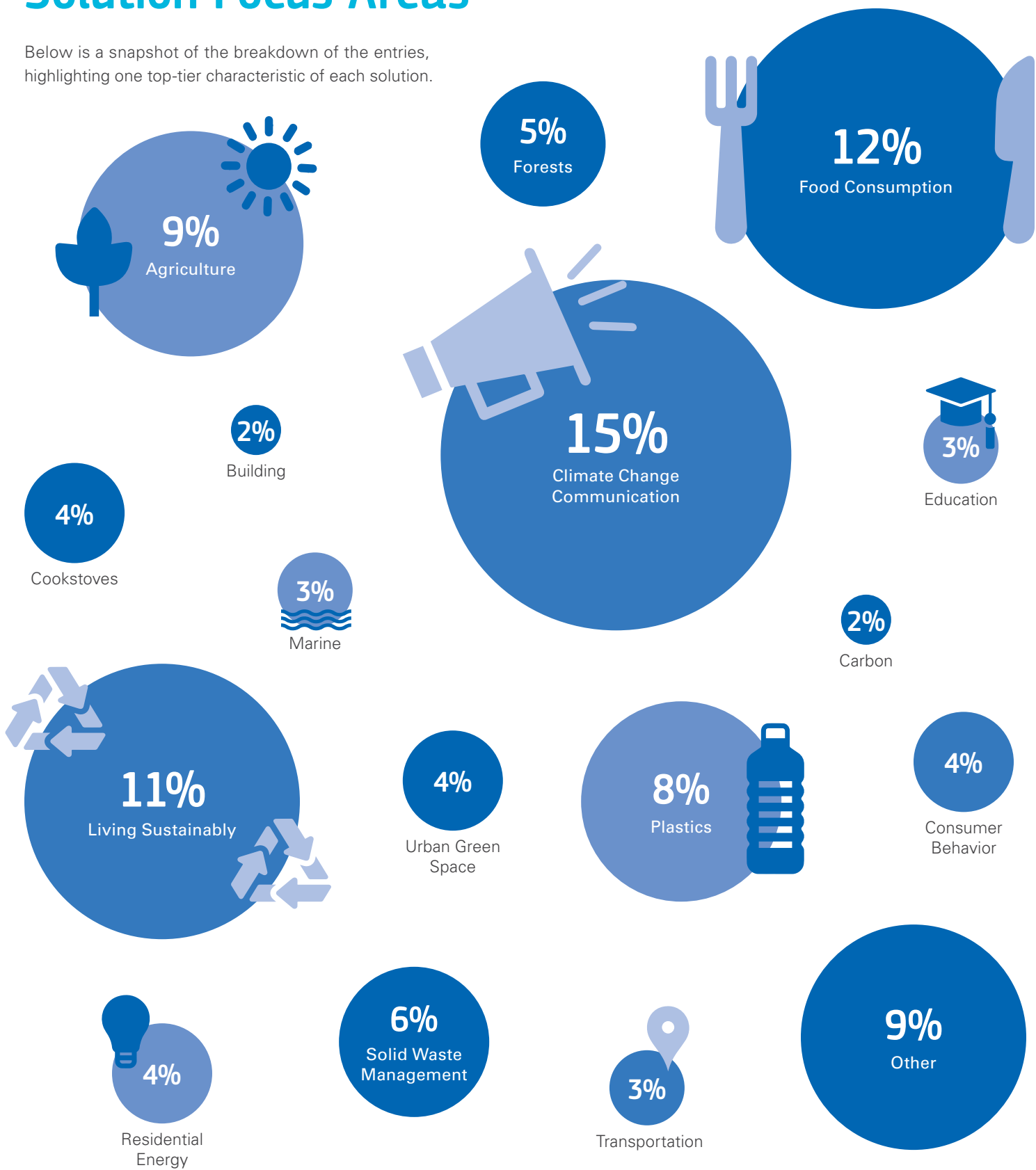
The largest share of entries focused on: (1) climate change communication (15%), which encompassed social marketing, education, art, and/or events, and (2) food consumption (12%), which encompassed food-related activities, such as reducing waste or promoting more climate-friendly diets. The fact that no single solution type characterized even a quarter of entries highlights just how many aspects of life are affected by climate change and how many avenues we have for changing our behavior.

Full details on all 197 projects from this year's search, as well as winners and entrants from past competitions, can be found on the Solution Search website at:

[www.solutionsearch.com](http://www.solutionsearch.com)

# Solution Focus Areas

Below is a snapshot of the breakdown of the entries, highlighting one top-tier characteristic of each solution.



\* Rounded to the nearest whole number.

## Strategies for the Climate:

# Solution Takeaways

This year's solutions spanned a wide variety of program types and strategies. Nevertheless, some telling trends emerged across entries. The following are our top five takeaways about how these solutions are achieving success in their work.

## 1| Create community in place



**Meet people where they are and get people to meet one another where they are.**

Solution Search entrants understand that local action usually requires local interaction. Many of this year's entrants are creating convening spaces as a part of their work. Several are reclaiming urban space by setting up multi-use urban parks and gardens in high density areas as hubs for community gathering, healthy food education and more. **Community Cycles**, a community-run non-profit bike shop in Boulder, Colorado (USA) serves not only as a bike shop but also as a hub for information, inspiration, and support for fossil-free commuters, as well as advocacy toward structural improvements that remove hurdles to commuting by bike. **Nada Grocery** is a 100% package-free grocery store in Vancouver that trains its employees to create a welcoming experience to help people at any stage of package-free living feel included and excited. Creating community in place can be done via technology as well. **RASAI's** ride-sharing app takes into account the unique conditions for the drivers and riders in Islamabad whom it brings together.

## 2| Gamify



**People want to do the right thing, but they also want to do the fun thing.**

25 of our entrants offer tech-based solutions, whether via software, a digital platform, or an app. These solutions embrace new technologies and our networked, globalized society, working to harness their power for good. Many of our tech solutions, including **EcoChallenge**, **JouleBug**, **Joro**, and **OroEco**, use gamification as a mechanism for increasing engagement and driving action. Game-based platforms can create a fun, competitive atmosphere that adds a proactive, accessible spirit to the otherwise frightening or disheartening narratives around climate change. Gamified apps can also be used across countries and in a variety of settings, such as company offices, manufacturing facilities, schools, or faith groups.



### 3| Meet multiple needs



#### Reduce emissions by increasing well-being.

In many of this year's solutions, reducing carbon is a co-benefit of behaviors that increase health, air quality, agricultural yield, or financial savings. By focusing on co-benefits, solutions can tackle multiple issues at once and tap into a broader set of motivations for adopting climate-friendly behaviors, expanding the available toolkit of behavioral strategies. **Jaya Organic Yojana (JOY)** works with farmers in India to replace synthetic fertilizer with worm-based composting, which increases carbon sequestration and crop yields, and decreases degradation and fertilizer costs. Two of our entries, **EcoAct Tanzania** and **Indonesia Medika**, offer "garbage medical insurance," a micro-health insurance program that simultaneously tackles lack of waste management and healthcare in slums by establishing a system in which slum-dwellers collect and deliver plastic waste in return for payment coverage for clinical and pharmacy services. **Smart Havens Africa** builds houses in Uganda with climate and environmentally friendly stabilized soil blocks, which are air-cured rather than fired like bricks, meeting housing demand without increasing pressure on forests.

### 4| Pay attention to the whole system



#### Understanding the bigger picture leads to novel solutions.

Many of our solutions focus on what has been crucially overlooked in a system, as well-illustrated by several of our food-focused entries. **Zest Labs** uses microensors to ensure better freshness of produce as it goes through the food distribution process and improve the decision-making of those managing the supply chain. In Switzerland, **Eaternity** has developed software for restaurants to track and measure their CO2 emissions, as well as the animal welfare and deforestation impacts of the meals they serve, in order to make their menus more climate and planet-friendly. At the end of the food journey, **412 Food Rescue** works with a network of dedicated volunteers in Pittsburgh, PA (USA), coordinated via a proprietary mobile app, to reduce food waste and address urban hunger by distributing surplus food. Other solutions focus on interactions and connections between systems, like **Behaviour Innovation's** Project Cane Changer, which works with farmers to reduce run off that is killing coral reefs.

## 5| Harness collective identities



**Taking individual action is easier when we feel a part of something bigger than ourselves.**

Regardless of whether they use a physical or digital platform, work in dense cities or remote rural communities, or with farmers, home cooks, or volunteer networks, most of this year's solutions are working towards a common goal of building community. Many of our entrants, including our two winners, focus on women and their collective strengths (see box below). Solutions help craft collective identities for participants, or more often, support existing identities as parents, neighbors, citizens, or professionals, in order to support and inspire people to change their behaviors.

### Climate Change Needs Behavior Change, Which Needs Women

34 of this year's entrants, including the two winning solutions, focus on women as the drivers of change in their communities. Women are often the key decision makers in households regarding key aspects of consumption, from which foods to make to what types of products to buy. More importantly, though women are often informal leaders in their communities, when they have the autonomy to take on formal roles in business, governance, and other aspects of public life, community well-being and climate resilience can increase.

Though they work in diverse settings, **1 Million Women**, **Solar Sister**, and **Mediae Company**

all focus on women as the catalysts of change. 1 Million Women leverages the collective purchasing power of urban-dwelling women in high-consumption settings. Solar Sister trains women solar entrepreneurs, supporting local business and female autonomy. Mediae Company recognizes the time, poverty, and parity trap of inefficient cooking and fuel collection. Through their television show, Shamba Chef, they increase social support for women's labor, and provide labor-saving alternatives so that women have more time to engage in other productive activities.

## Strategies for the Climate: Behavior Change

Environmental programs have historically relied on a limited set of levers to achieve their desired results. Traditional programs focus on introducing material incentives or disincentives, enacting rules and regulations, and/or providing information to fill knowledge gaps. All of these tactics have made key contributions to environmental work, but they tend to assume that humans will make fully rational decisions, follow the rules, or act based on facts. In order to increase adoption of desirable behaviors, we need to engage people through understanding their full set of motivations. This means enhancing the levers we have and adding new ones using insights from social and behavioral science. Three additional groups of strategies are particularly promising for changing

behaviors: emotional appeals, social influences, and choice architecture.

Solution Search entrants are expertly using these behavioral levers; yet, interestingly even they themselves don't always articulate what they are doing in behavioral science terms. Our understanding of the intersection of behavioral science and climate change action is still evolving. By defining these terms and sharing examples of these strategies in action, our hope is that practitioners will be better able to recognize and amplify the use of behavioral levers in their work, and implement behavioral science in new ways.

## Emotional Appeals



When making decisions, we often rely on our emotions more than on reason. Messaging and other interventions that appeal to specific emotions and feelings, such as joy, fear, or pride, can powerfully engage the decision making centers of the brain.<sup>3</sup> Additionally, taking the time to learn what matters to individuals and communities, such as their interests and values, can make a message more meaningful. Solution Search projects appeal to a range of emotions, such as pride or love, to encourage behavior change. For example, **The Kasiisi Project** taps into the immense emotional power of parental love. Seeing their children excited about clean cookstoves encourages parents to adopt them, both to support their children's learning and to improve their quality of life by protecting their health over the long term.

3. Bechara, A., Damasio, H., & Damasio, A. R. (2000). Emotion, decision making and the orbitofrontal cortex. *Cerebral cortex*, 10(3), 295-307.

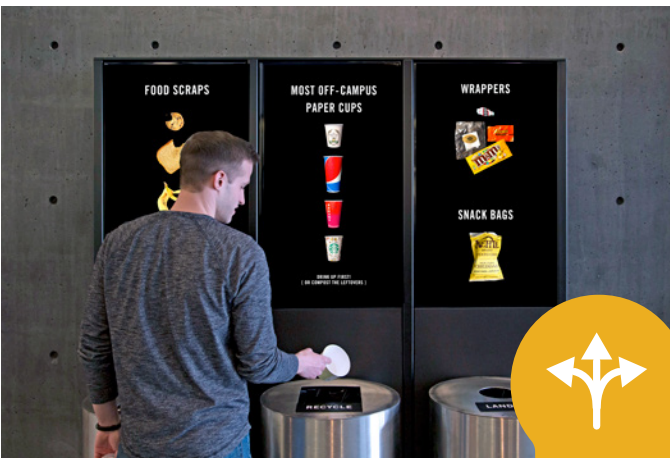


# Social Influences



People are social animals. We form much of our identity via the groups to which we belong, and we care about the beliefs, expectations, and behavior of others, particularly those whom we respect and like. We also learn from watching those around us. Social influences and norms can therefore be powerful motivators for behavior, providing cues for how to behave and adding pressure to change behavior when it deviates from the group. For example, online platforms like **EcoChallenge** and **JouleBug** expertly utilize social influences like public competition and social sharing to promote eco-friendly behaviors. By making actions observable and helping people visualize their individual actions as part of a greater collective, platforms like these create a sense of social accountability.

# Choice Architecture



People often have limited and selective attention. Thoughtfully structuring the conditions and context in which people make decisions can therefore greatly help to achieve desired results.<sup>4</sup> Simplifying what people are asked to do, limiting the number of options, creating defaults, or sending well-timed prompts or reminders are all choice architecture in action. For example, the **University of Washington's** "Smart Bins" are equipped with digital screens that educate people about waste at the moment that they want to throw something away, provide positive feedback when waste is sorted correctly, and humorous reminders when it is not.

4. Thaler, R. H., & Sunstein, C. R. (2009). *Nudge: Improving decisions about health, wealth, and happiness*. Penguin.





# FINALIST PROFILES





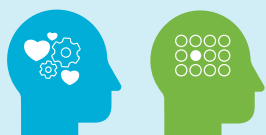


## Solar Power, Women Power Solar Sister

USA, Nigeria, Tanzania, Uganda

**Author:** Benjamin Kumpf, Policy Specialist Innovation, UNDP

Remote rural communities are often the hardest to reach with centralized services like water and power. Solar Sister saw a pathway to change the standard model of rural solar energy delivery by linking energy provision with women's entrepreneurship. They offer business training, market access, and peer support to women in Nigeria, Tanzania and Uganda who then run their own solar businesses in their communities. The program has trained a network of 3,000 Solar Sisters, who have provided affordable, best-in-class solar lighting and connectivity, as well as clean cooking solutions, to over 1.3 million people. The training prepares these Solar Sisters to provide affordable solar power to their friends, families, and neighbors, earning a family-sustaining income in the process. Research conducted in partnership with MIT found that customers are more concerned with the social aspects of a purchase, such as whether they already know their salesperson and whether maintenance services are locally available. Solar Sister has taken this need for trust and turned it into the bedrock of their model, using the proven power of social trust networks to spread affordable home solar power in rural communities. Hilaria was one of Solar Sister's first entrepreneurs in Tanzania. To date she has sold almost 400 products, reaching over 2,000 people with affordable and safe ways to cook and power their lives. One of her most important goals was to be able to pay for her daughters to go to school, which she did, thanks to her solar business : "If I had studied, I would have had so many opportunities. I went to primary school only. I don't want my children to be like me," she says."



### Featured Behavior Levers

Solar Sister uses the **emotional appeal** of trust combined with the **social influence** of local community members.

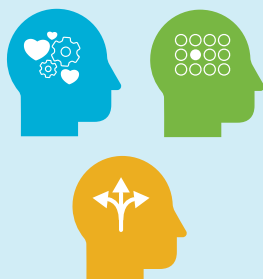


## Women Social Networking for Good 1 Million Women

Australia

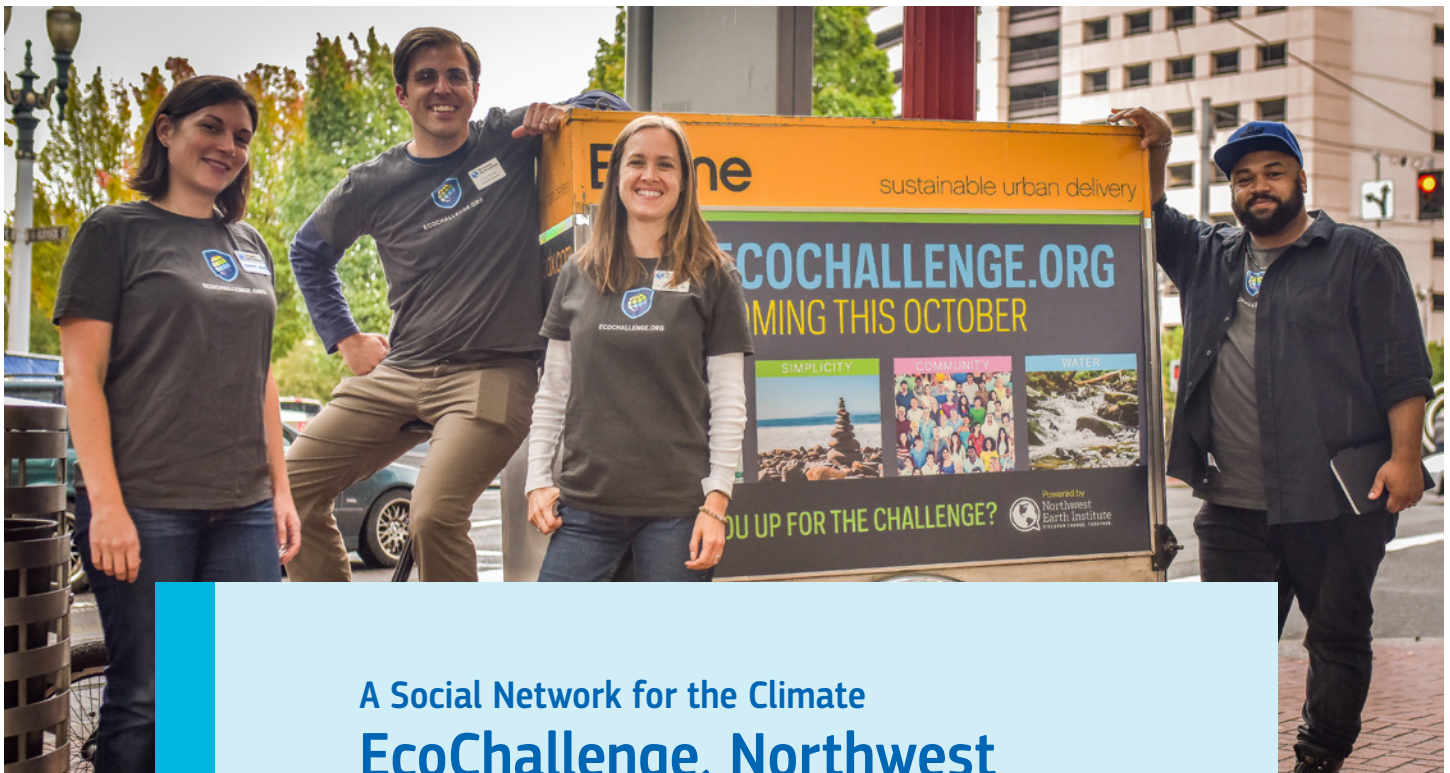
**Author:** Paula Caballero, Managing Director for Climate and Water, Rare

Worldwide, women make a substantial portion of the consumer decisions that determine a household's carbon footprint. 1 Million Women recognizes and harnesses the enormous consumer power of women for good. The largest women's movement in Australia, 1 Million Women connects and empowers women to cut carbon pollution with everyday behaviors that minimize food waste, reduce overconsumption, and boost home energy savings. 1 Million Women uses an online platform as well as offline calls to action to build confidence and community in their users by celebrating their collective identity as women. They build momentum towards more action, by increasing the observability of behaviors and focusing on accessible actions. Importantly, the organization also identifies and works against rebound behaviors, such as reverting back to using more energy because you have taken certain home efficiency measures. They help their users see that small individual habits can lead to large collective impacts. 1 Million Women currently has over 560,000 members and 110,000 women have taken the 1 Million Women carbon challenge.



### Featured Behavior Levers

1 Million Women uses the **emotional appeal** of pride, the **social influence** of an online community, and **choice architecture** in the form of reminders to take certain actions.



EARLY ENTRANT WINNER

## A Social Network for the Climate EcoChallenge, Northwest Earth Institute

United States

**Author:** Varun Gauri, Senior Economist and Co-head, Mind, Behavior and Development Unit (eMBeD), World Bank

How people move from intention to action is one of the biggest questions of behavioral science, and we know that education is often necessary but almost never sufficient. So does EcoChallenge. The online, multi-sector social platform uses social marketing tools to move people from learning and sharing to taking measurable action on sustainable solutions through social, gamified challenges. The platform fosters a supportive environment for attempting and sustaining behaviors with social influences like peer sharing and celebrations for both effort and impact. By seeing the stories and accomplishment of their peers alongside their own, users are able to visualize their collective impact. Since 2015, over 50,000 people have participated on the platform, and with their recent partnership with Project Drawdown, that number is sure to keep growing. EcoChallenge participants have conserved 1.3 million gallons of water, swapped 18,000 light bulbs for high efficiency LEDs, and traveled almost 270,000 miles by human-powered or shared transportation. Perhaps most telling, most people who participate in an EcoChallenge sustain their new habits. When surveyed, 97% of respondents said they were still doing their EcoChallenge actions six months later and 69% had started new, additional actions.



### Featured Behavior Levers

EcoChallenge uses a suite of **social influences** to foster competition and community and **choice architecture** to encourage habitual behavior.





## Changing Farming Practices and Perceptions to Protect a Natural Wonder

# Behaviour Innovation

Australia

**Author:** Aileen Lee, Chief Program Officer, Environmental Conservation, Gordon and Betty Moore Foundation

Prior to 2016, the Australian Government and sugar cane farmers were in a standoff that threatened the health of the Great Barrier Reef. Runoff from farms was weakening the reef and its resilience to climate change, but farmers were slow to change their practices, despite the government's use of traditional tools like legislation and economic incentives. Behaviour Innovation used behavioral science to improve the situation. Through project 'Cane Changer,' Behaviour Innovation changed the relationship between sugar cane farmers and the Australian government and figured out how to get farmers to adopt reef-safe practices. It turns out that the issue was primarily one of identity. The team analyzed the behavioral drivers of over 4,000 farmers and found that farmers saw changing their practices as a threat to their social identity, and furthermore felt scapegoated by the government as villains of the reef. To turn things around, Cane Changer sought to tie a strong positive social identity to the key behavior they wanted to promote: farmer accreditation. To get accredited, farmers had to keep written records, which was a new and unwelcome behavior for many of them. Project Cane Changer reframed keeping records with a positive identity for farmers with the slogan "Setting the Record Straight." The messaging tapped into farmers' need to be seen in a positive light and recognized for their efforts. The slogan has become so popular that it's now widely used across the industry. The State Environment Minister has also signed an official statement recognizing cane farmers for their efforts and environmental stewardship. This work is important because so many efforts to make agricultural production systems more sustainable falter when it comes to driving change at the farm level. Cane Changer demonstrates that it is possible and indeed, inspiring.



### Featured Behavior Lever

Behaviour Innovation uses **emotional appeals** by tapping into the reputational desires of farmers.



## Changing How We Buy Food, One Behavioral Insight at a Time

# Better Buying Lab, World Resources Institute

United Kingdom

**Author:** Henry Paulson, Former U.S. Treasury Secretary

Would you rather eat an ‘alligator pear’ or an ‘avocado?’ The behavioral principles behind these kinds of questions are what the Better Buying Lab focuses on in their work to shift diets towards more plant-based foods, which can reduce carbon emissions and pressure on the environment. Better Buying Lab works to understand and promote the kinds of language and menu design that get people to make those shifts. Research has shown that language can have a powerful effect on what foods we choose, but most plant-forward dishes are described in ways that don’t appeal to meat eaters. Better Buying Lab engaged in their own research to develop a set of core principles for naming plant-based foods that they have found can increase sales between 15-70%. They are now partnering with a multinational organization to apply these principles across their staff cafeterias. Through creative workshops, local staff have the opportunity to generate their own dish names for the plant-based dishes sold at their site. Better Buying Lab’s partner organization has begun to roll out changes to the language describing plant-based foods across all 222 of their staff cafeterias. Initial results suggest an increase of up to 70% in sales of plant-based dishes. Better Buying Lab’s research findings are all open-access, so that this success can be replicated wherever food is sold.



### Featured Behavior Levers

Better Buying Lab uses **emotional appeals** in appealing to positive associations with food names and **choice architecture** in how food is displayed on menus.





## Friendly Competition to Reduce Carbon: There's an App for That JouleBug

United States

**Author:** Brett Jenks, President and CEO, Rare

Climate change needs behavior change, but as individuals, we often don't know where to begin. JouleBug, a mobile app platform, breaks sustainable behaviors into simple actions that anyone can complete throughout their day. Using friendly competition, social sharing, and rewards, JouleBug helps users achieve sustainability goals like conserving energy and water, reducing emissions by using public transportation, and eating more plant-rich diets. JouleBug uses emotional appeals like encouragements and badges to make people proud of the reductions they've accomplished, and social influences like friendly competition to motivate people to do more. They time their featured challenges to encourage specific behavior changes at the most effective times, such as hosting water conservation challenges in the summer. Organizations and companies have also participated, with customizable actions and incentives and prizes for challenges. Collectively, individuals' daily habits add up to make a big impact. As of 2018, JouleBug users had collectively saved over 40,000 tons of CO<sup>2</sup>.



### Featured Behavior Levers

JouleBug uses a suite of **social influences** to foster competition and community and **choice architecture** in the form of prompts to encourage timely behaviors.





## Cooking up Behavior Change Mediae Company

United Kingdom, Kenya

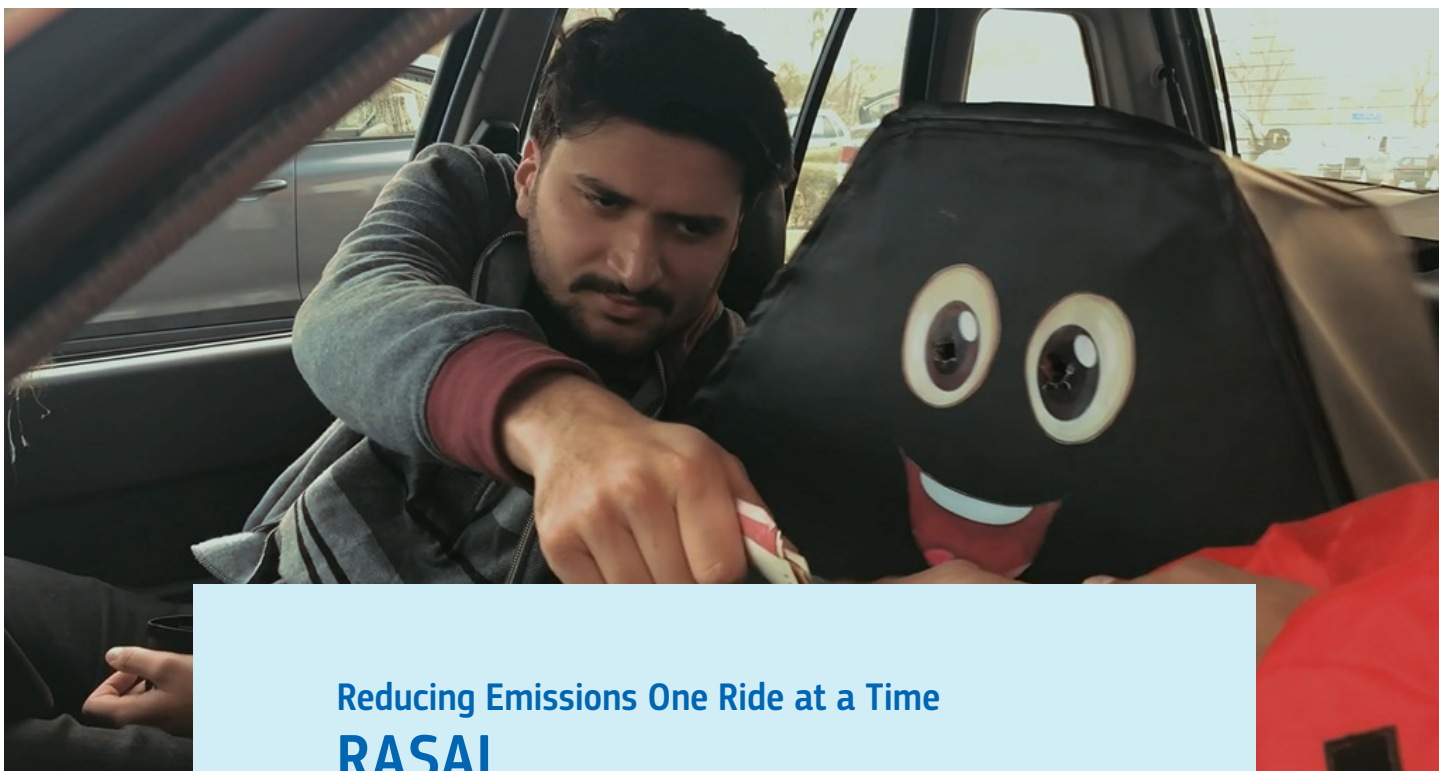
**Author:** Anthony Leiserowitz, Director, Yale Program on Climate Change Communication

Shamba Chef is a reality-style television and radio series that is changing the way people cook in Kenya. Smoke from solid-fuel cookstoves packs a double punch, emitting global warming pollution as well as particulate pollutants. Acute respiratory illnesses, primarily from cookstoves, are the second leading cause of death in Kenya. Shamba Chef tells the stories of real families in Kenya to highlight the dangers of cooking with inefficient, polluting cookstoves and fuels and to raise awareness about readily available cleaner cooking options. The series also introduces families to nutritious recipes and provides practical tips for sustainable gardening and food management. The series is broadcast weekly on Citizen TV, Kenya's most popular station, in English and Kiswahili. During Season 1, over three million households in Kenya tuned in on a weekly basis, making it the top-rated show in its time slot. As an added bonus, viewers can text its mobile platform, iChef, to get tailored advice on clean cooking and nutrition. Shamba Chef increases social support for clean cooking by featuring real Kenyan women who viewers can identify with, and invites viewers to follow along on their journey as they make the switch to the desired behavior. The series also engages men as key decision makers within households, portraying them as modern men and responsible fathers when they support their wives in cooking with a new stove or fuel. By sharing the experiences of real Kenyan women in the kitchen, Shamba Chef inspires Kenyans to make changes to their cooking practices and diets, thereby reducing their emissions and improving the health and well-being of their families.



### Featured Behavior Levers

Mediae Company uses **emotional appeals** in tapping into people's familial identities and **social influences** by normalizing certain behaviors.



## Reducing Emissions One Ride at a Time

# RASAI

Pakistan

**Author:** M. Sanjayan, CEO, Conservation International

Ridesharing can reduce traffic congestion and emissions by filling empty seats in cars, but getting people to sign on to carpooling can be a big behavioral hurdle. RASAI has brought data-informed ride sharing to Islamabad, Pakistan, pairing drivers with passengers along their daily commutes. Though RASAI started their business in a risk and change adverse environment, several factors are on their side. Expensive fuel, lack of reliable public transit, and the combination of low incomes and high transit fares, especially for women, all make ridesharing an appealing option. RASAI's app smooths the transition to ridesharing by offering optimized pairing and high flexibility for both drivers and riders—riders aren't locked into riding with a single driver and drivers can make their own schedules—increasing usership and satisfaction. Many drivers have reported that, beyond the added income, the opportunity to socialize or the emotional appeal of giving a ride to someone in need are both reasons they participate. RASAI currently serves around 500 riders per month.



### Featured Behavior Levers

RASAI uses **emotional appeals** to build trust and **choice architecture** to optimize ride sharing.





## Kids Leading the Way to Safer, Cleaner Cookstoves

# The Kasiisi Project

USA, Uganda

**Author:** Charlotte Blank, Chief Behavioral Officer, Maritz

What if instead of making a baking soda and vinegar volcano, your child's school project was to help build you a new stove? Unique among cookstove projects, The Kasiisi Project has identified a group of trusted messengers who are unusually successful at increasing awareness and adoption of fuel-efficient, low-emission cookstoves: children. Working with committed teachers, the project helps set up "Stove Building Teams" in local schools, which are then run by the students themselves. Students bring their excitement and passion for their newly acquired knowledge and skills back to their communities, which in turn sparks involvement and requests for low-emission stoves among community adults. Hearing the message from their children inspires long-term adoption of the new stoves by their parents, and involvement of household adults in the construction of the stoves ensures that they will be maintained over time. This multi-generational approach changes parents' behavior for immediate positive impacts, and builds skills and attitudes in children that are critical to reducing climate change in the long-term. In just three years, students with The Kasiisi Project have built over 550 stoves in 14 communities, 85% of which are still in use after a year.



### Featured Behavior Levers

The Kasiisi Project relies on the **emotional appeal** of students as messengers and **social influences** among parents.





## Behavioral Science Helping College Students Eat their Veggies

# University of Cambridge

United Kingdom

**Author:** David Halpern, Chief Executive, The Behavioural Insights Team

The University of Cambridge was already making great strides in food sustainability by no longer serving red meat in its catering services and providing vegan food preparation training for university chefs. PhD student Emma Garnett, however, knew the University could do even more to encourage low-carbon, plant-forward diets without impacting profits, and set out to develop an evidence-based solution. Collaborating with catering managers, chefs, and academic researchers, she helped the university test two choice architecture interventions in a subset of their cafeterias. In the first, they placed vegetarian options nearest the entrance to school cafeterias. In the second, they doubled the proportion of vegetarian options available. Data on over 200,000 meals sold showed that simply increasing vegetarian availability was the more effective intervention. Doubling availability increased vegetarian sales from 42-97% of meals sold, regardless of cafeteria users' baseline meat preferences. As a result of this research, many of Cambridge's colleges are now serving more vegetarian options, and lowering their carbon footprints as a result. Over the course of a year, just one cafeteria serving 500 meals a day, six days a week can avoid about 66 tons of emissions if just 10% of sales change to vegetarian meals.



### Featured Behavior Lever

University of Cambridge changes the **choice architecture** in cafeterias by increasing vegetarian option availability.

# The Path Forward



Our Solution Search finalists are working all over the world to improve social and environmental outcomes for people and the planet. They show us a path forward towards global action on climate: many actors doing work in communities that collectively adds up to big impacts. Taking action on climate doesn't look like a beautiful aria from a single vocalist. It looks like a full orchestra accompanying a chorus; many people, each skilled in their own discipline, contributing to a whole that is greater than the sum of its parts.

Taken together, the nearly 200 Solution Search entrants represent new solutions and novel approaches to tested ones. There are patterns in their focus, whether on rethinking waste management, revitalizing urban greenspace, or helping urban dwellers make smarter lifestyle choices. Entrants are implementing these tested solutions via various strategies, multiplying what works in a way that is unique to each local context. They are using behavioral strategies to better understand and motivate their neighbors, and to make sure that their solutions stick. It is vital that we continue to multiply what works, and equally important that we keep imagining and testing new programs, communication strategies, technologies, governance structures, and community models that move us towards more sustainable and abundant ways of living in and with the natural world.

Our finalists and winners noticed what wasn't working in their neighborhoods, cities, or regions, took the next step to envision what could work, and then turned those visions into realities. Beyond looking for what isn't working around us, we must also seek out the bright spots that are succeeding and amplify them. Our Solution Search finalists teach us that it just takes the willingness to start for more and more of us, all over the world, to swell the ranks of the orchestra of climate action, take part in the diverse solutions that are happening already and bring to life the many more that are possible.









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