



delterra 

 The
Circulate
Initiative

HONING THE HABIT: FOUR INSIGHTS ON SPREADING RECYCLING BEHAVIOR



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EXECUTIVE SUMMARY

Behavior change is incredibly difficult. Getting people to adopt new habits requires disruption of ingrained patterns and embracing unfamiliar actions. Yet increasing recycling rates depends on overcoming just this sort of challenge. With recyclable material in short supply and the global recycling rate languishing, establishing recycling habits throughout the world is more important than ever.

In this article (second in our [Recycling Behavior Change series](#)), we provide an overview of Delterra's approach to recycling behavior change and share our key insights and practical lessons from our programs in Indonesia and Argentina. In these projects, curbside-collection recycling service was either enhanced or introduced to communities for the first time. Our experience in this context shows that, while each community is unique, some common principles apply in establishing widespread and consistent recycling behavior.



INSIGHT #1

To take the idea of recycling seriously, people need to see that their community's recycling infrastructure and services are here to stay.

INSIGHT #2

Promoting recycling is not a cut-and-paste effort. Each community needs emotionally-rooted appeals that resonate with their specific values and priorities.


INSIGHT #3

Mass communication is not enough. Personal engagement is what drives real behavior change.

INSIGHT #4

A rapid "test and learn" approach is critical for identifying the most effective interventions.



This article is the second in our Recycling Behavior Change series. The first publication, focused on the economic returns of behavior change programs, can be found here: 

The analysis outlined in the paper demonstrates that well designed investments into fit-for-purpose recycling behavior change initiatives can generate community participation and improved material recovery rates high enough to compensate for the cost of those initiatives, making them as valuable as more traditional investments into recycling infrastructure. Some of the key findings include:

- Promoting recycling behavior can pay back quickly, especially when prices reflect environmental impacts.
- Behavior change costs less than technology-based alternatives for boosting recycling outcomes.
- Deeper investment in community engagement is likely needed to reach high recycling rates.

Behavior change, as any psychologist will tell you, is incredibly difficult. Getting people to adopt new habits and buy into new systems requires disruption of ingrained patterns and taking unfamiliar actions.

Yet increasing recycling rates depends on overcoming just this sort of challenge. The promise of migrating toward a circular economy asks people to change how they handle a basic component of their lives on a daily basis: separating their household waste. With recyclable material in short supply and the global recycling rate languishing, establishing recycling habits throughout the world is more important than ever.

In this article, we provide an overview of Delterra's approach to recycling behavior change and share our key insights and practical lessons from our programs. In each of these projects – an informal settlement of Barrio Mugica in Buenos Aires, a set of urban districts in southern Bali, and the mid-sized Argentinian city of Olavarría – curbside-style recycling service was either enhanced or introduced to communities for the first time. **While most people were already aware of the value of recycling, residents were not habituated to the practice.**

Our recycling behavior change experience supports approaches and conclusions from fellow practitioners in the field, including [Rare's Center for Behavior & the Environment](#) and The Recycling Partnership's report on [Key Concepts of Influencing Recycling Behaviors to Drive a Circular Economy](#).

OVERVIEW OF DELTERRA'S RECYCLING BEHAVIOR CHANGE APPROACH

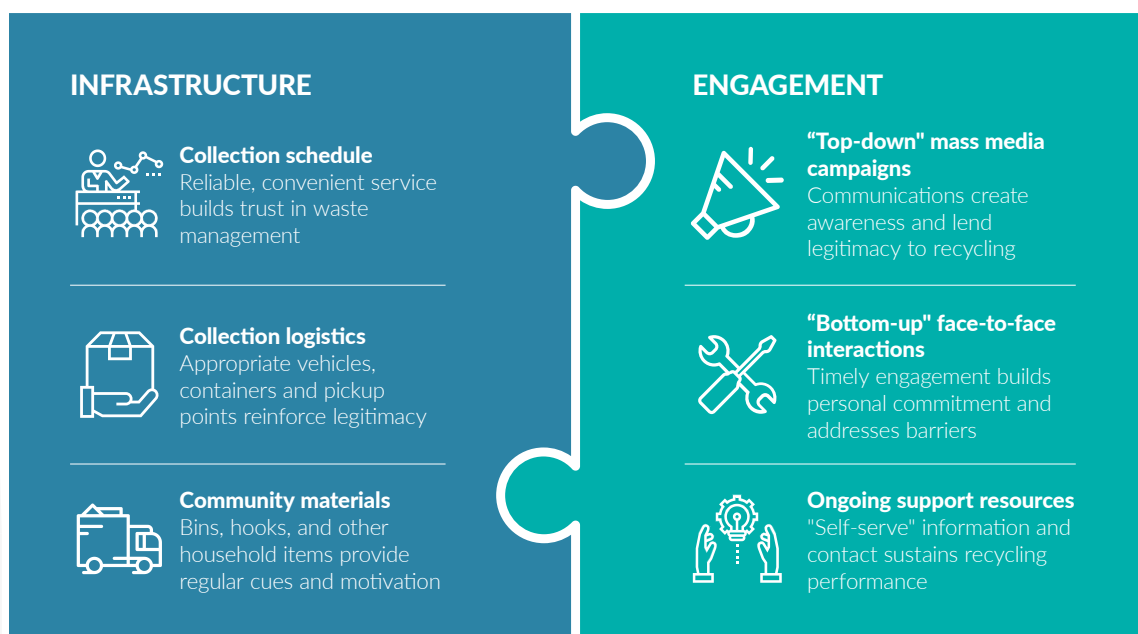
A recycling behavior change program aims to take people on a behavioral journey: from basic awareness that a recycling initiative exists in their community, to a consistent habit of correctly separating waste at the source. In a broad sense, **we ask citizens to change their waste management habits and practices, while also challenging misconceptions about how challenging or time-consuming recycling is.**

The central design principle for all our programs is source separation: the sorting of waste into recyclables, compostables, and residual waste, both for residential and commercial customers. As we outlined in a [previous report](#), we believe that source separation is a necessary capability for capturing higher volumes and values from waste streams, for enabling community building, and for increasing the health and welfare of waste workers.

Our programs work to create widespread source separation behavior through two main building blocks. Together, these lead to a transformative experience for participants and are essential for creating meaningful and lasting impact:

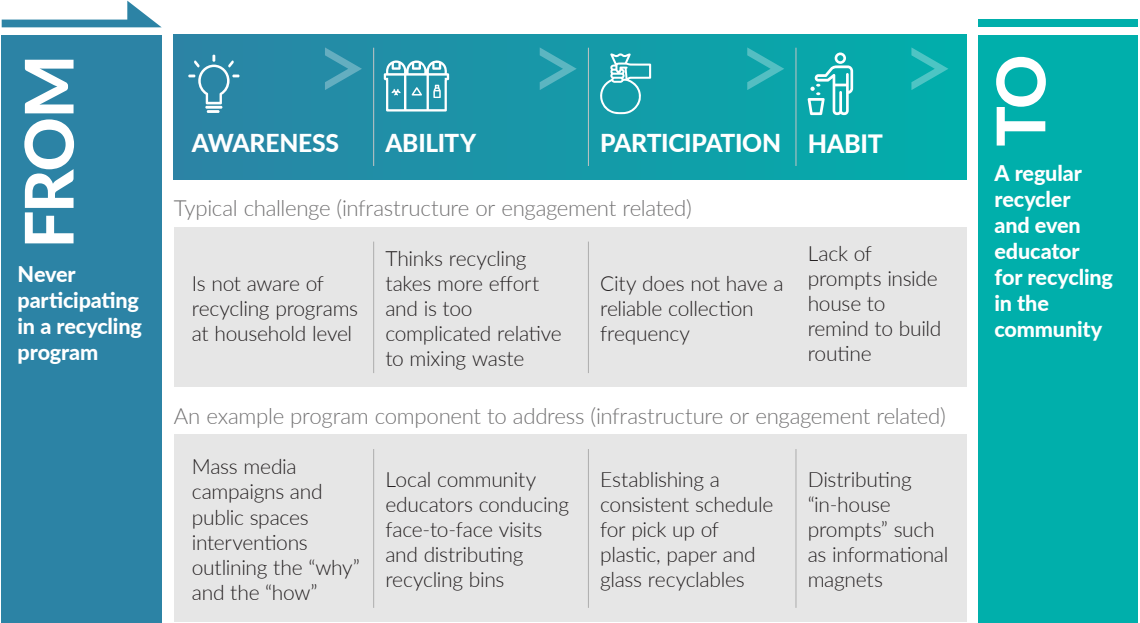
- **INFRASTRUCTURE:** Elements such as bins and adjusted pickup schedules provide consistent reinforcement of habits.
- **ENGAGEMENT:** Targeted interventions cultivate the habit of separating waste.

COMPONENTS OF RECYCLING BEHAVIOR CHANGE: **INFRASTRUCTURE** IS A KEY PART AND NEEDS TO SUPPORT COMMUNITY **ENGAGEMENT**

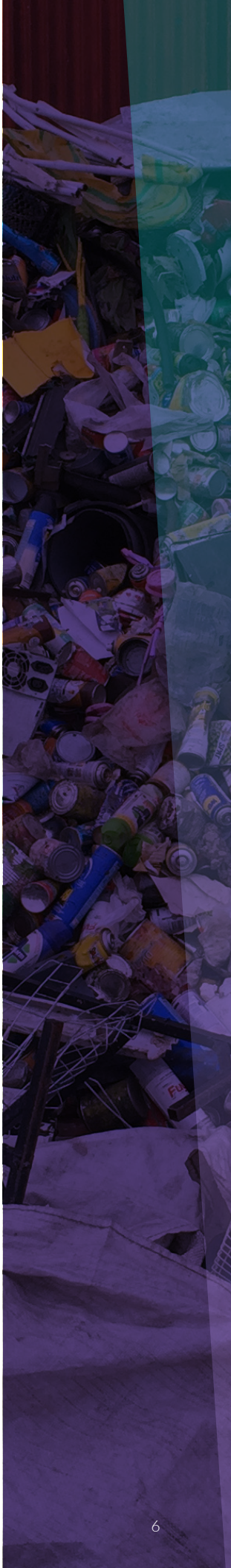


When creating these programs, we design these infrastructure and engagement elements to support a community’s full behavior change journey. Where other recycling campaigns might stop at the first few stages - raising awareness and providing information on how to recycle - we pay special attention to the participation stage, where people make their initial efforts to separate waste, and the habit stage, where people attempt to make separating waste a regular routine in their lives. We even see some participants become community recycling advocates.

RECYCLING BEHAVIOR JOURNEY: A COMBINATION OF INFRASTRUCTURE AND ENGAGEMENT INITIATIVES CAN ADDRESS COMMON BARRIERS AT EACH STEP



Our experience implementing behavior change initiatives across Indonesia and Argentina shows that, while each community is unique, some common principles apply in establishing widespread and consistent recycling behavior.



INSIGHT #1

TO TAKE THE IDEA OF RECYCLING SERIOUSLY, PEOPLE NEED TO SEE THAT THEIR COMMUNITY'S RECYCLING INFRASTRUCTURE AND SERVICES ARE HERE TO STAY.

In order for people to fundamentally change the way they handle waste, they first have to believe in the legitimacy and reliability of their local recycling infrastructure. **People want to know that collection trucks will come when they are supposed to, that the waste they separate will actually get recycled, and that every stakeholder in the system is doing their part.** In the communities we work in, we have identified three elements essential for building this trust:

- A consistent and reliable collection schedule
- Collection logistics optimized for user experience
- Supportive, leave-behind community materials

COLLECTION SCHEDULE

Making sure a **customer's waste is collected at regular and predictable intervals represents a critical piece in the optics of recycling.** If collection trucks come by only sporadically or miss entire areas, confidence in the value and durability of recycling erodes. Providing consistency requires not only high levels of performance among waste collectors, but an initial effort, prior to the start of service, to identify all customers who should receive collection services. In communities where waste management is not a part of municipal service, this is not a trivial undertaking.

In Bali, for example, where most existing collection services were informal, a significant mismatch often existed between the customer data maintained by the villages, the service fee collectors, and the waste workers. To make these data more accurate, we performed verification exercises to ensure that current customer lists matched collection service lists. We then digitized these data sets using an operations platform, thus making them more transparent and easier to update and manage. We also utilized house ID stickers to identify verified customers and make future monitoring and evaluation more efficient.



COLLECTION LOGISTICS

Residents also need to have confidence that their waste will end up in the right places. In failed experiments, **a common complaint was: “The trucks just mix it back up anyway. Why should I care?”** Many residents in Bali, for instance, watched skeptically as trucks picked up all three streams at the same time – recyclables, compostables and residual waste. To address this skepticism, **we changed the schedule so trucks collected just one category of waste at a time.** In the mid-sized Argentinian city of Olavarria, where collection schedules were also switched to different days but the same trucks were used, we introduced, as a temporary solution, magnetic banners that waste management companies could quickly attach to their trucks to clearly indicate what category was being picked up that day. Eventually, waste management companies could invest in different trucks for different waste streams.



Image: Waste trucks in Olavarria were marked in a clear way indicating different waste types.

COMMUNITY MATERIALS

Since waste collection service starts with source separation inside the home or business, **providing tangible, visual cues to customers is an important part of the formation of new habits.** In Bali, we used bins not only to make sorting easy, but to remind people about their recycling program and encourage them to separate their waste. Each household was given three large, differently-colored containers, which served as a visual reminder about what type of waste went where. Feedback from residents indicated that they saw the bins as a sign to take recycling seriously, and **these tangible reminders helped drive a nearly 40% increase in participation.** Color coding also aided waste workers in distinguishing which bins to pick up.



“These tangible reminders helped drive a nearly 40% increase in participation”

Image: The 3 waste bin system in Bali.

Bins were not appropriate for every program, due to their cost and a lack of suitability for indoor use. In the informal settlement of Barrio Mugica in Argentina, bins could not fit easily into residents' small living spaces. Instead, we found inspiration from residents who hung their waste bags from metal grates in front of their doors, to keep stray dogs from getting to them.



Image: The 3-hook system in Barrio Mugica proved to be very effective.

The simple, affordable 3-hook hanger we created served multiple goals – a convenient place to hang bags of separated recyclables, compostables, and mixed waste for collection; a visual cue to consistently reinforce new behaviors; and a degree of social influence. The aesthetically appealing hooks were coveted by neighbors who did not yet have one.

Regardless of how residents collected their waste, one particular item – a refrigerator magnet – was popular across all our programs. **We found that even people who did not support their local recycling program still put the magnets up on their refrigerators. This created a very visible reminder about recycling in a high-traffic area inside homes, opening the door for other interventions to nudge people into participating.** It was rare for people to throw their magnet away, making this affordable item a key tool for our recycling behavior change effort.

INSIGHT #2

BEHAVIOR CHANGE IS NOT A CUT-AND-PASTE EFFORT. EACH COMMUNITY NEEDS EMOTIONALLY-ROOTED APPEALS THAT RESONATE WITH THEIR SPECIFIC VALUES AND PRIORITIES.

Across all programs, we began our initiatives by not only thinking about what a community needed to do, but also about why they would be motivated to do so. Instead of simply providing information on the mechanics of recycling, **we designed messages and campaigns that could speak to the unique culture and context of each community.** While some basic, tried-and-true elements were applied across all programs, identifying differentiating lifestyles and values features was critical.

IN OLAVARRIA, we sought to appeal to the city's self-identity and sense of curiosity. As a relatively clean city, we knew that appeals focused on cleaning up litter were not going to feel relevant. Instead, we tapped into this proud industrial town's perception of itself as a modern and advanced community. Residents are extremely knowledgeable about industrial processes and genuinely wanted to understand how the recycling system works. Our mass media campaign therefore highlighted how recycling could help further modernize the city. It also provided detailed information about how people could participate in the program.

For those curious residents who went the extra step of asking recycling employees and waste collectors about the initiative – for example, what products are made from recycled materials, or whether employees were being fairly compensated – we invested in providing follow-up information. To help build trust in the program and further reinforce recycling behaviors, we provided answers to residents' questions on multiple channels: the program website, social media, and printed flyers. We also made a point to answer questions during dedicated community events.

IN BALI, we quickly learned that our messages about the environmental crisis of unmanaged waste were ineffective. Residents there had already been inundated with messaging about plastic pollution and were desensitized to the issue. After conducting research, we pivoted to tap into the region's tight-knit, hierarchical culture. Our letters introducing the recycling program carried stamps from the two types of authorities important in Bali – the official local government and the traditional, religious adat. We also partnered with village leaders and engaged people in familiar settings, such as hosting trainings in traditional meeting halls as part of regular community meetings. **This created a stronger bond between campaigners and residents, and helped achieve both greater community engagement and more consistent recycling behaviors.**

In the informal settlement of **BARRIO MUGICA,** where rates of poverty and violence are high, most residents do not feel a sense of neighborhood pride, and messages around recycling as a community effort would not resonate. But people do care deeply about the safety of their children, and were motivated by messages that highlighted how trash collection and source separation helped provide safer, cleaner streets for their children to play in.

INSIGHT #3

MASS COMMUNICATION IS NOT ENOUGH. PERSONAL ENGAGEMENT IS WHAT DRIVES REAL BEHAVIOR CHANGE.

At the start of behavior change campaigns, “top down” mass communication and/or official announcements provide a critical foundation. They offer multiple channels for creating awareness about the program and reinforce the legitimacy of the initiative. They also lay the groundwork for future engagement with residents.

Without broad awareness of recycling as a starting point, more personalized attempts to activate recycling habits tend to have limited success.

Across our project areas, mass outreach took a variety of forms, including informational fliers, letters bearing official seals and welcoming residents to the program, WhatsApp videos from village leaders, and digital flyers distributed by city authorities. In Olavarria, we also distributed reusable bags in local shops, which created additional publicity for the program.



Image: Our program in Olavarria was launched in a press conference in the Los Robles community association.

But on its own, mass communication was not sufficient to get people to really buy into the new idea of separating their household trash. Motivating people to change their daily behaviors required consistent and strategic “bottom up” face-to-face interactions. All of our programs used some form of door-to-door conversations with residents and local shop owners, as well as in-person engagement at community events. From our experience, we learned that the most effective personal engagement programs have five characteristics:



AN INFORMATIVE INTRODUCTION

Our initial door-to-door visits provided helpful information to residents as well as allowing us to understand residents’ starting attitude towards the program. In Olavarria, fieldwork agents followed a three-minute script to give residents an overview of the program and then ask them to participate. Based on their responses, we classified households as Promoters (those who advocated for the program; 9%), Recyclers (those who separated their trash but did not advocate; 27%), Non-practitioners (40%), Skeptics (those not planning to participate; 6.5%) and Unresponsive (17.5%). We used these categories to tailor our approach and allocate our resources appropriately.

SUPPORTIVE

When people felt the program was making an effort to support them – such as with information, follow-ups on their progress, and help answering questions – they felt compelled to at least give it a try. In Bali and Barrio Mugica, this outreach was done by familiar and credible faces. Bali residents heard presentations by village leaders, who hold high levels of credibility, and received visits from educators either from the village or the city, who worked in tandem with waste collectors on their rounds, offering direct feedback to residents. In Barrio Mugica, waste collection workers, all neighborhood locals, also played the role of door-to-door educators, often building strong relationships with residents. Some even went so far as to organize visits for residents to see the local recycling center.



Each of these connections created a sense of social expectation. Instead of just hearing general messages about recycling, residents had met the people asking them to separate their trash.

Image: Waste workers delivering door to door education and change agents the the information stand in Barrio Mugica.





THE RIGHT TIMING

Early on in these personalized outreach efforts, we learned that face-to-face interactions had the greatest impact once a program had started – when people had specific questions or were trying to navigate changes to their normal waste collection schedule. Outreach done prior to recycling service starting, although necessary, sometimes felt abstract for residents. During post-service change visits, residents who were successfully practicing source separation received praise and encouragement, while residents who hadn't been participating regularly were offered supportive suggestions and help in areas they may have been experiencing difficulty with.

CONCISE

Keeping engagements short helped avoid information overload. This was a valuable approach for all interactions, whether a home visit, training session, or workshop. In Olavarría, the three-minute scripts allowed fieldwork agents to reach as many residents as possible.



DIGITAL

In an effort to scale our personal engagements with residents, we launched digital tools such as program websites, social media accounts, and a chatbot. **The chatbot served as a dynamic educational resource to remind residents about pickup days, and to answer their questions about which types of waste go where.**

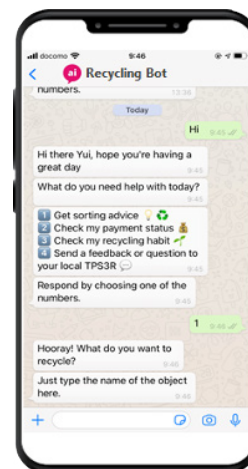


Image: Examples of the Olavarría program webpage (this was supplemented by Instagram, Facebook and WhatsApp) and the Recycling Chatbot.

INSIGHT #4

A RAPID “TEST AND LEARN” APPROACH IS CRITICAL FOR IDENTIFYING THE MOST EFFECTIVE INTERVENTIONS.

Because our behavior change programs utilize both a common framework and specific elements tailored to each community’s culture and needs, rapid testing allowed us to find the best solutions. **Before rolling out any of our programs to an entire community, we tested a variety of prototype designs with small populations.** During these pilots, we measured participation rates and collected data on both **STRATEGIC** and **PRACTICAL** elements of the program. This allowed us to assess which parts were working and which were failing to produce desired outcomes in terms of community participation and recyclable quality/yield at the material recovery facilities. We also assembled qualitative data by keeping in close contact with residents, both casually while walking through neighborhoods and during structured interviews. This helped develop an ongoing understanding of what was happening on the ground.



A STRATEGIC COURSE CORRECTION

In Olavarria, for example, a multi-staged pilot gave us critical insights about our strategy. In an attempt to make our resource-intensive outreach more scalable, we used a two-minute video instead of the door-to-door speech (the flyer and magnet were still delivered). This video included footage from the sorting and composting plants and was distributed through the neighborhood WhatsApp group. Results were disappointing – many people didn't click on the video or found it too long. Participation rates were less than 20%.

We pivoted to find an effective balance between mass outreach and personalized interactions, eventually using a recycling starter kit for each household (an introductory door-to-door visit by a pair of team members, a flyer, and a refrigerator magnet) combined with broader communication tools like a standing sign in a nearby park.

This blended approach yielded an initial participation rate of more than 50%, which remained at 40% several months after initiation. We continue to optimize the personal engagement component – how many households one activation agent can cover, the best activation agent profile, and best times to knock on doors.

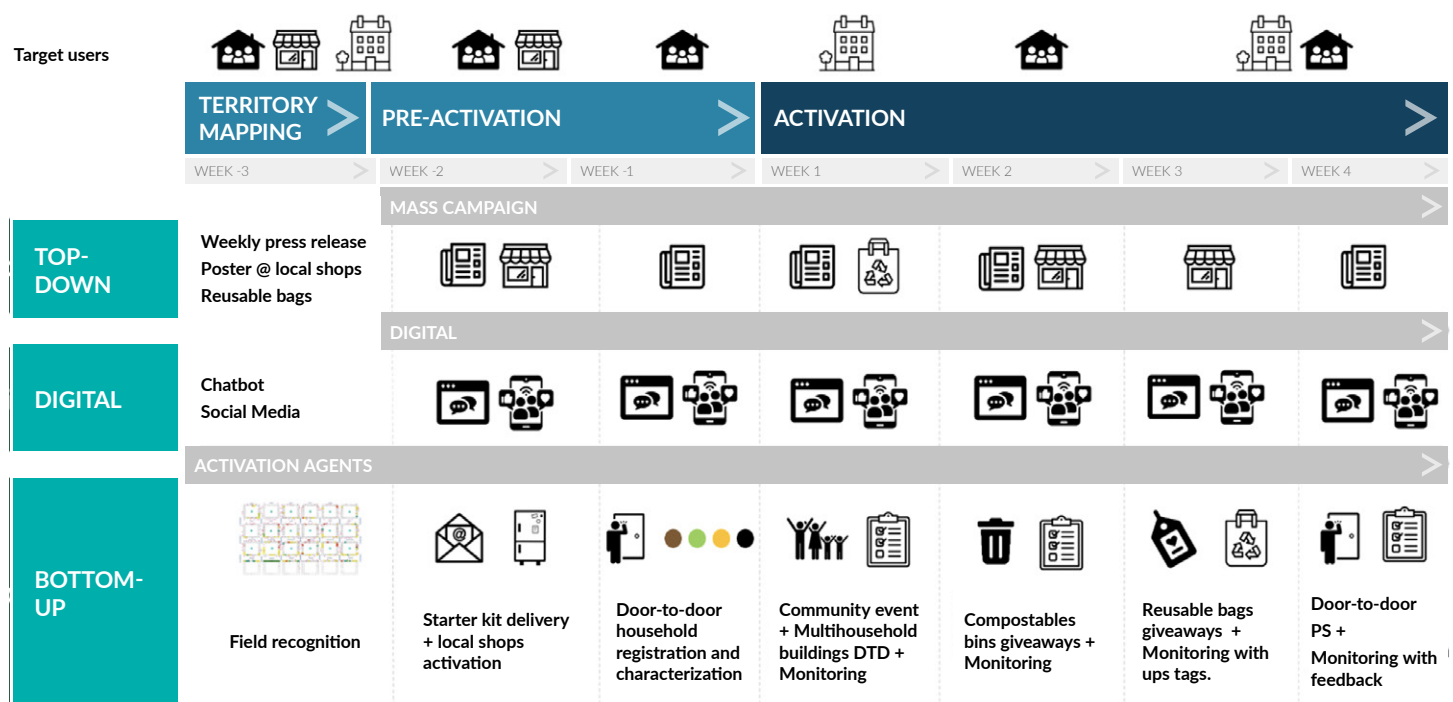


Image: Example of the pilot strategy and timeline used in Olavarria, Argentina.

A SUCCESSFUL PRACTICAL APPLICATION

After observing community habits and constraints in Barrio Mugica, we designed and tested the hooks to hold waste bags. The process included prototyping with local providers, testing solutions on the ground with residents, and incorporating input from both residents and waste workers. The final design has been rolled out throughout the Barrio and remains highly effective.

ORIGINAL DEVICE



- The only permanent infrastructure for waste management in the barrio
- Improves working conditions for cooperatives (avoids waste collection from floor)
- Avoids waste vandalization by street dogs
- Facilitates interaction between residents and cooperatives
- Resistant to elements (metal)
- Consistent with existing solutions in the barrio (people already use hooks to handle waste)

TODAY'S IMPROVED DEVICE



- Provides program visibility across the barrio
- Includes motivational phrase (E.g. recycle for your kids)
- Solution includes a space for digital data tracking (E.g. QR code)
- Includes sorting tag that reinforces the separation of material (recycles, organics, waste)
- Hook has safer, rounded points compared to the original design

Image: Barrio Mugica's hook design evolution.



CONCLUSION

Cultivating and improving recycling behavior can be complex, but we believe that approaching it holistically and applying key insights can, over time, solidify the community-wide adoption of new, long-term recycling habits. By deploying supportive infrastructure as well as community engagement, and focusing on emotionally-rooted messaging, a blend of mass and face-to-face communication, and a commitment to continuous experimentation, recycling behavior change can be effective in shifting recycling outcomes in communities around the world.

In coming months, we will release additional reports that take a deep dive into our behavior change programs in specific communities and our experience with digital tools. In meantime, we welcome feedback and input from other organizations also working to advance recycling behavior change. Please reach out to Jeremy Douglas, Partnerships Director at Jeremy@delterra.org.

CONTRIBUTORS

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