Wastebaskets 2.0

Adapting Urban Wastebaskets to Support Solid Waste Sorting at the Point of Origin

Implementation Toolkit v1.2

UNDP accelerator labs

This experimental toolkit was created by the UNDP Paraguay Accelerator Lab, as submission for the first Light Urban Interventions Competition, organized and promoted in November-December 2020 by Calle Cultura, El Granel, OCA, ICPA, and the Goethe Institute, with the support of Centro Cultural de España Juan de Salazar and En Común.

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What is the purpose of this Toolkit?

Our goal is to **help local communities transform their sidewalk wastebaskets** into an adapted urban equipment that **facilitates waste sorting at the point of origin,** at a low cost. Waste sorting is important to scale-up recycling and this toolkit will help you engage your community in the process of **mapping and adapting existing wastebaskets** so that each can have at least two sections after the intervention: **one for recyclables and another for non-recyclables***. Anyone can organize this: from **residents** to **community or civil society organizations or groups.**

Traditional Design

Adapted Design

Community Engagement

*By recyclables we refer to solid waste that have value in the local recycling market because there are companies that buy and recycle them. Each city may have different types of waste value. Researching and documenting this can be part of the community engagement process.

How to support waste sorting at origin? (1)

Through the design and manufacturing of **custom grids** that divide **existing urban wastebaskets** in two different sections: one for recyclables, another for non-recyclables. Each section should fit at least **one 100L waste bag.** To achieve the transformation, we propose a community engagement process that is organized in 6 steps, starting with **mapping** what you have in the community all the way to **installing the custom grids** and **monitoring** how they work.

Community Engagement

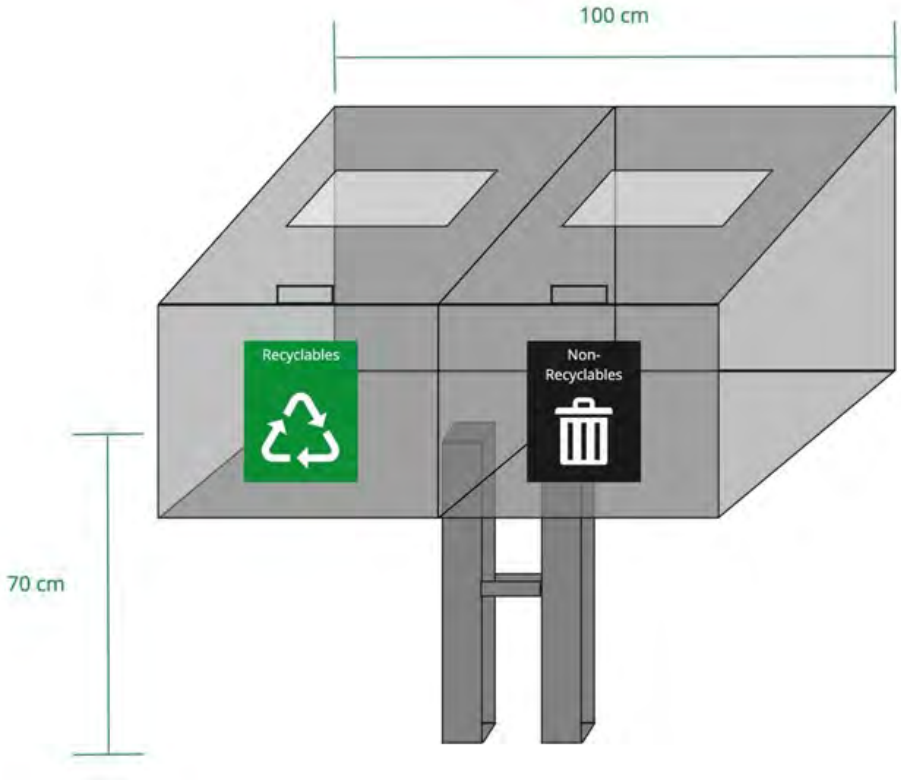
Traditional Wastebaskets

- Community Mapping
- Preselection and consent
- Design, manufacturing, and preparation
- Installation
- Monitoring

Wastebaskets 2.0

How to support waste sorting at origin? (2)

As an alternative to adaptation with these custom grids, new baskets that already feature **two different sections** can also be **designed, manufactured, and installed** (if adaptation is not possible). The original design, with its technical specifications, is available in this link, but there are plenty of existing options. Manufacturing a new wastebasket with this design can cost anywhere between **$40** and **$100** (in Paraguay).



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What can we learn while doing this?

This intervention rekindles traditional urban infrastructure by repurposing it through community engagement. Each step in the process is a learning opportunity on **how to facilitate or motivate people to adopt, reuse and recycle.**

Who is this toolkit for?

This toolkit is for **people, groups, organizations, municipalities or businesses** that want to **replicate the intervention or get inspiration for new initiatives** that promote recycling (or other behavior associated to recycling) in their neighborhoods, communities, cities or territories.

STEP #1
Community Mapping

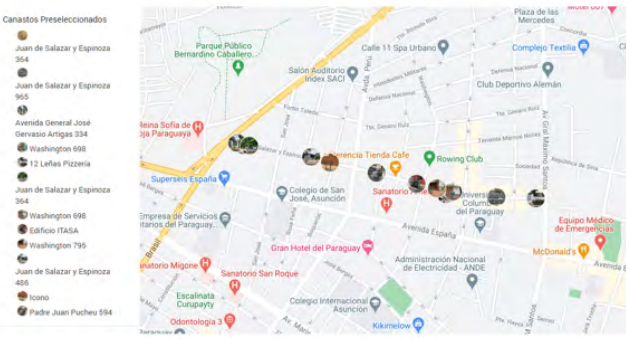
Community mapping

The first stage of the process is **getting to know the community.** We need to understand what we have and what we can work with. Community mapping is about **observing and documenting current solutions** that may signal the needs of the community and the opportunities for intervention.

How to map?

There are many ways to do it, including simply going around the neighborhood and writing observations in a notebook or creating detailed digital maps. The goal is to document **waste management infrastructures and practices that are already in place.** This intervention **maps the street wastebaskets** that are available in the area of interest. We suggest these steps:

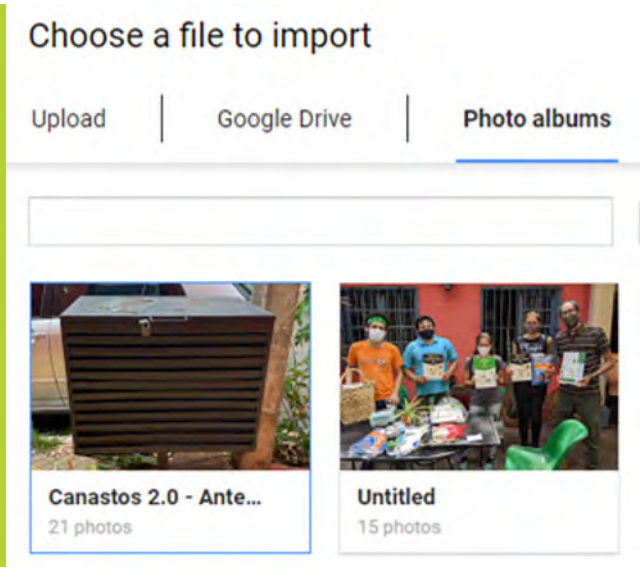
1. get a smartphone with camera and GPS,
2. enable the GPS, and
3. take a weekend to go around the selected area, documenting each wastebasket through a geo-referenced picture,
4. Put all these pictures in one place (e.g., a shared online album, a shared folder, etc.)



How to create a digital map

There are many ways to transfer the picture coordinates into a digital map. One easy way to do it is as follow:

1. upload the pictures to Google Photos,
2. create an album with them,
3. create a map with Google My Maps*, and
4. finally, import the points from the album created.



Community mapping: *other maps*

Mapping is not only for infrastructure. Mapping can also **tell us about the history of the area,** making its challenges and opportunities visible. Mapping the baskets might seem trivial, but it is also a perfect opportunity to **learn more about how the people in the community manage their waste:** what recycling practices are already in place, what barriers and challenges exist, and what opportunities can we identify for new experiences and solutions to take place.

What else can be mapped?

1. perceptions of recycling or reasons why people adopt or don't adopt recycling behavior,
2. barriers that prevent recycling from becoming common behavior,
3. recycling practices already adopted by the community,
4. the diverse practices that shape the community's waste management.

Mapping is an opportunity for **Human-Centered Design:** the process of creating solutions that come from the observation and understanding of people's day to day experiences. Recording the local waste management experiences, analyzing them to uncover latent needs that serve as **inspiration to design new waste management systems** that adjust to the local reality. Ideal change agents for such processes could be children and teenagers. We suggest **organizing human-centered design activities** in order to respond to the challenge of **adopting waste separation practices in our homes,** in which **children and teenagers** are behind the research and design of new solutions.

STEP #2
Preselection and consent

Preselection

Once all the wastebaskets are recorded, and there is familiarization with the community, the next step is to select the best opportunities for intervention. The baskets can be adapted in different ways according to the available resources. In this guide, we focus on **wastebaskets large enough to fit at least two 100L bags.** This can be done with precise measurements, **or simply evaluating the collected basket pictures qualitatively.**

Consent

Once the intervention points are defined, the next step is **talking to the residents or business owners** who own the basket. We need to visit each house or business to explain what the intervention is about, invite them to participate and obtain their **informed consent** for us to transform their wastebaskets. For the visits, it is important to prepare two documents:

1. An **informed consent form** that collect residents' authorization to modify their wastebaskets.
2. A document that **describes the intervention** (model), explaining it in terms that are easy to understand by any person.

These can be integrated into a single document. It is important to appropriately inform the owners about all the implications of the intervention, inviting them to participate and making sure their consent is voluntary and free.

Consent: *step by step*

1. Present the proposal,
2. Inform about the benefits of the intervention (renewal of baskets, including repairs and paint, and adaptation to allow waste separation) and the potential risks if you identify any,
3. Sensibilize the families about the importance of recycling and sorting waste at the point of origin,
4. Invite them to participate and request informed consent to beautify and adapt the respective basket,
5. In case consent is obtained:

    1. sign an implementation agreement with the owner,
    2. use this time to collect other relevant details (such as surveys on recycling perceptions in each household),
    3. measure the basket's dimensions: width at the base, width at the top, depth.

Measurement Template

This template can be used to obtain the necessary measurements for the design of the custom grids. We recommend taking measurements in millimeters.

Address

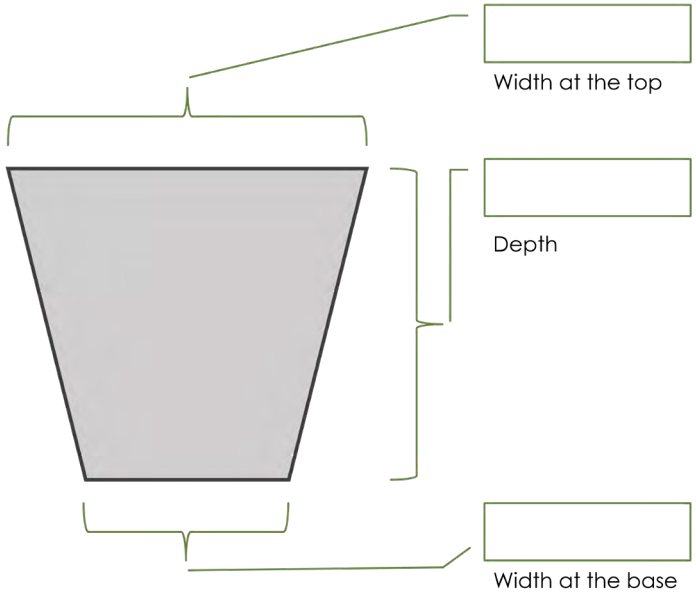
_____

Number/Home Identifier

_____

Contact

_____

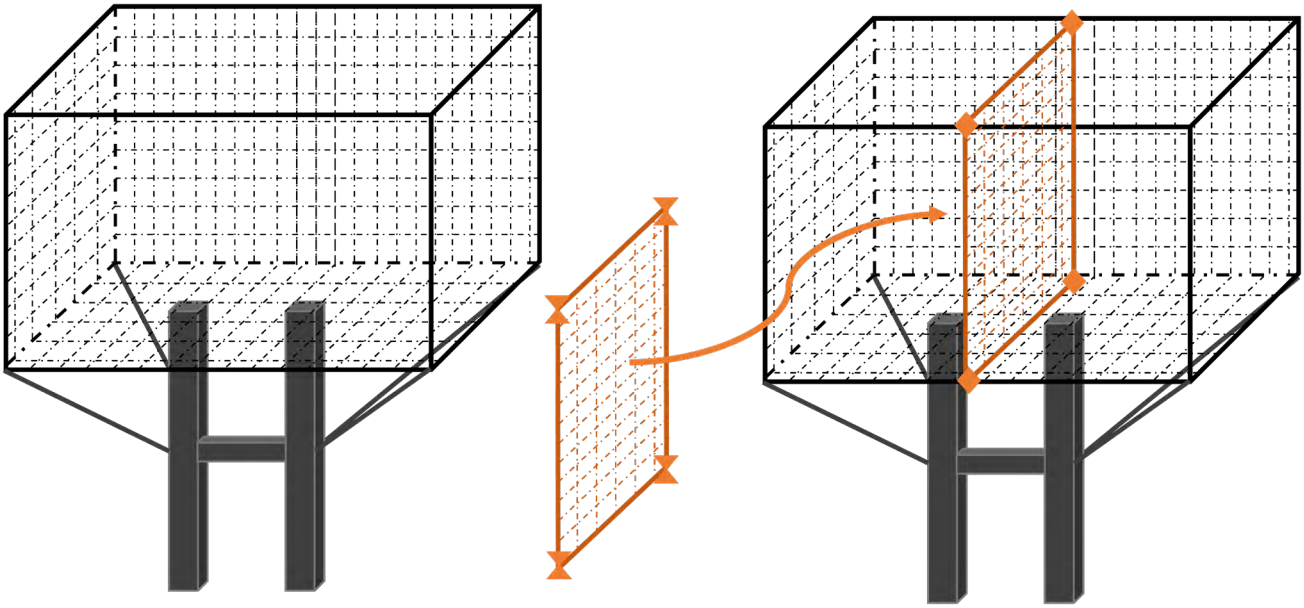


STEP #3

Design, manufacturing and preparation

Design

The wastebasket's adaptation design is generally applicable to any urban waste basket. The simple solution we propose is inspired by a **basket originally designed for sorting from the start*.**



**Attributions: This design is an adaptation inspired by the basket design available at https://miro.com/app/board/o9J_lc0Bwvs=/*

To transform wastebaskets, you can manufacture **customized separation grids,** adjusted to each dimensions of the selected baskets, and which can be easily installed and removed, using affordable materials.

Design

It is also important to provide and equip each wastebasket with **information materials** that explain how to use them, and guide residents, waste-pickers that collect recyclables, and municipal waste collection services. For our intervention, we adapted materials from a locally organized campaign organized by UNDP (Revive) in collaboration with the Environment and Development Ministry, and the Municipality of Asuncion. We have also provided calendars for use within homes.

Manufacturing

This is another opportunity for **community mapping.** Are there any blacksmiths in the community? How can we get them involved? **What other local businesses could provide the resources for this intervention?** Can we manufacture them ourselves as a creative activity for kids in the community?

On average, this type of grid, measuring 600mm x 600mm would cost about
$10 in Paraguay

Preparation

Part of the intervention is having a clear **list of necessary resources** so that the intervention can become a reality. Besides from the grids, other required materials include:

1. Paint brushes to paint the baskets in case of being authorized to do so
2. Cable ties (or zip ties) to fix the grids
3. Turpentine and/or paint thinner
4. Red paint (or another color to be determined) for non-recyclables section
5. Green paint (or another color to be determined) for recyclables section
6. Cloths/rags
7. Waste bags
8. Security and hygiene equipment for volunteers (gloves)
9. Adhesive tape
10. Masking tape
11. Lamination paper (for informative graphics, if needed)
12. Kraft paper or simply old newspapers
13. Other craft tools (scissors, rulers, etc.)

Community engagement is essential in this initiative. You will need **to organize and motivate residents or other people to volunteer** in contributing their hands during the installation days and the monitoring phase. **Creating and beginning to nurture this community of volunteers** is therefore a key part of the preparation process.

STEP #4
Installation

Today is the day! Equipped with all the custom grids and other required materials, the installation is the easiest and most fun part of the process. It only takes 30 minutes per basket to paint (if authorized to do so) and then fix the grid and the information posters once the paint is dry.

To fix the grids and information posters, we suggest using cable ties (zip ties), adjusting in as many edges as needed to fix the adaptations well enough.

STEP #5
Monitoring and evaluation

Monitoring and evaluation

Once the installation is completed, monitoring and evaluation can take many forms, from simple **monitoring visits to observe and document the wastebaskets' use while hosting informal conversations with residents,** all the way up to a **controlled experiment,** collecting recycling surveys both households that participated and those that did not. Both approaches are valid.

We recommend collecting information and observations about the following aspects during the monitoring phase:

1. What does the community know about recycling?
2. What perceptions exist around recycling practices?
3. What general perceptions exist about solid waste management and disposal?
4. What are the levels of trust that exist within the community? What about between the community and waste-pickers?

STEP #6

Replicate, adapt and transform the experience as needed! And share alike :)

Revive

GUÍA PARA EL MANEJO DE LOS RESIDUOS SÓLIDOS URBANOS EN INSTITUCIONES

Todo material que se ensucia, daña y mezcla con la basura se vuelve más difícil de recuperar e insertar en el proceso de reciclaje; de manera que, para asegurar la calidad de los materiales, es necesario que estos estén limpios, secos y separados.

SEPARACIÓN EN ORIGEN

La separación en origen consiste en discriminar los materiales que pueden ser reutilizados o reciclados de aquellos que no y que son considerados resto o basura. Esta práctica evita que ocurra una degradación del residuo y facilita su inserción a la cadena del reciclaje sin disminuir su valor.

Para dar el primer paso en el proceso de clasificación en origen e iniciar el nuevo hábito de la separación se recomienda iniciar de la siguiente manera:

CATEGORÍA DE RESIDUO

A. VALORIZABLES

ENVASES Y EMBALAJES

PAPEL Y CARTÓN

B. ORGÁNICOS Y RESTO

MÁS RECOMENDABLE

MENOS RECOMENDABLE

¿Qué son los residuos sólidos urbanos?

Son los generados en cada habitación, unidad habitacional o similares, que resultan de la eliminación de los materiales que utilizan en sus actividades domésticas, de los productos que consumen y sus envases, embalajes o empaques, y los provenientes de cualquier otra actividad que genere residuos sólidos con características domiciliarias, y los resultantes de las actividades de limpieza de las vías públicas y áreas comunes, siempre que no estén considerados por la Ley como residuos de manejo especial.

Este canasto de basuras ahora está preparado con dos espacios, uno para los residuos reciclables y otro para lo no reciclable.

Le invitamos a separar los residuos en su hogar, utilizando estos espacios cómo lo indican los carteles instalados. Así nos beneficiamos todos: los residuos ya llegan separados a Cateura, o cuándo lo retira un reciclador de base, no tendrá la necesidad de abrir las bolsas, evitando los problemas a los que eso a veces acarrea.

3R

Una verdadera gestión integral y responsable de los residuos sólidos se basa en la aplicación de las medidas de las 3 R.

REDUCIR

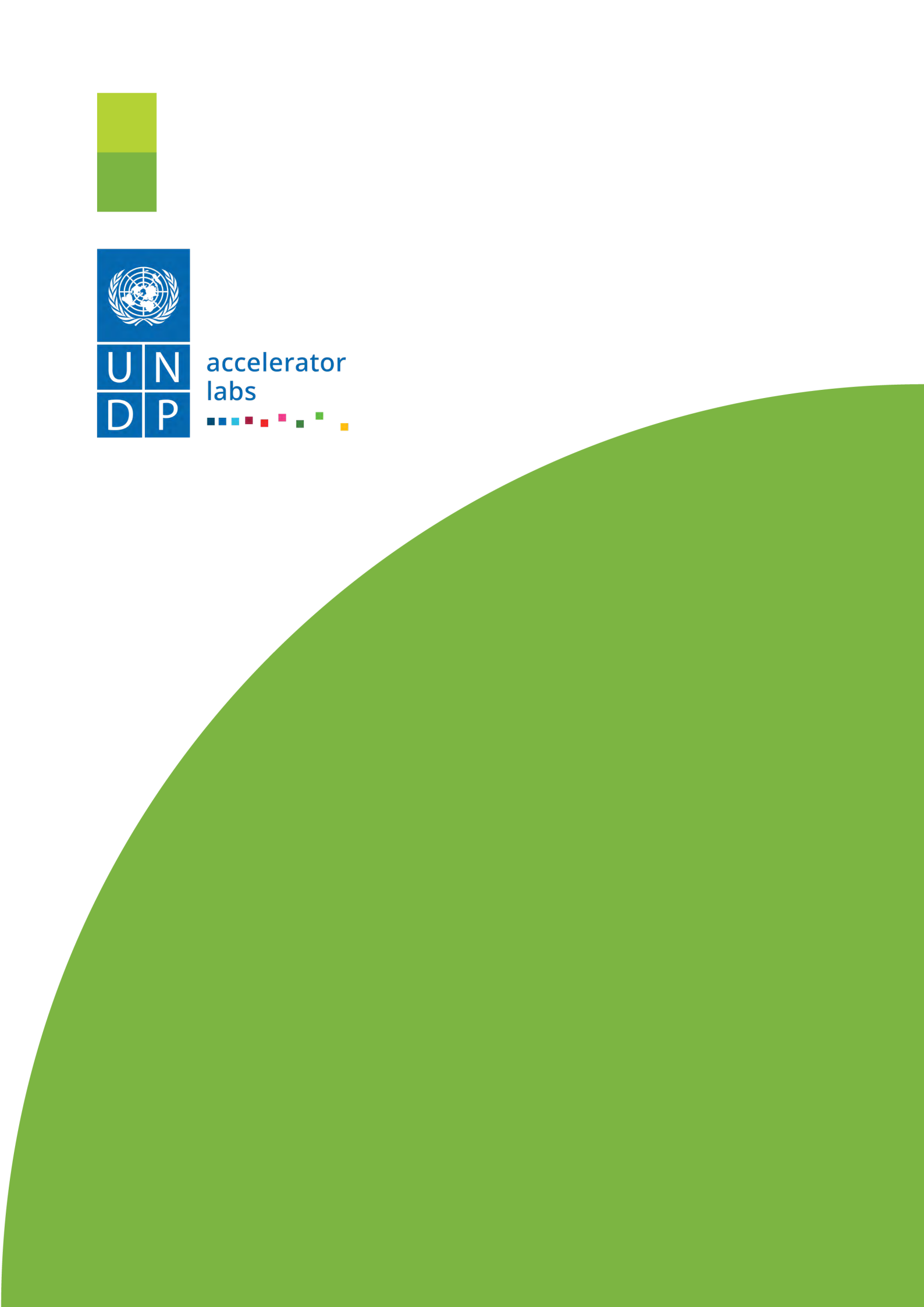
Son medidas orientadas a la prevención en la generación de los residuos, ya sea en cantidad o en su peligrosidad.

REUTILIZAR

Consiste en volver a utilizar objetos que ya no usamos y queremos desprendernos de ellos, dándoles el mismo uso o un uso nuevo antes de despositarlos en el tacho o contenedor.

RECICLAR

Consiste en someter los materiales a procesos físicos, químicos y/o biológicos para obtener una materia prima reciclada o un nuevo producto.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