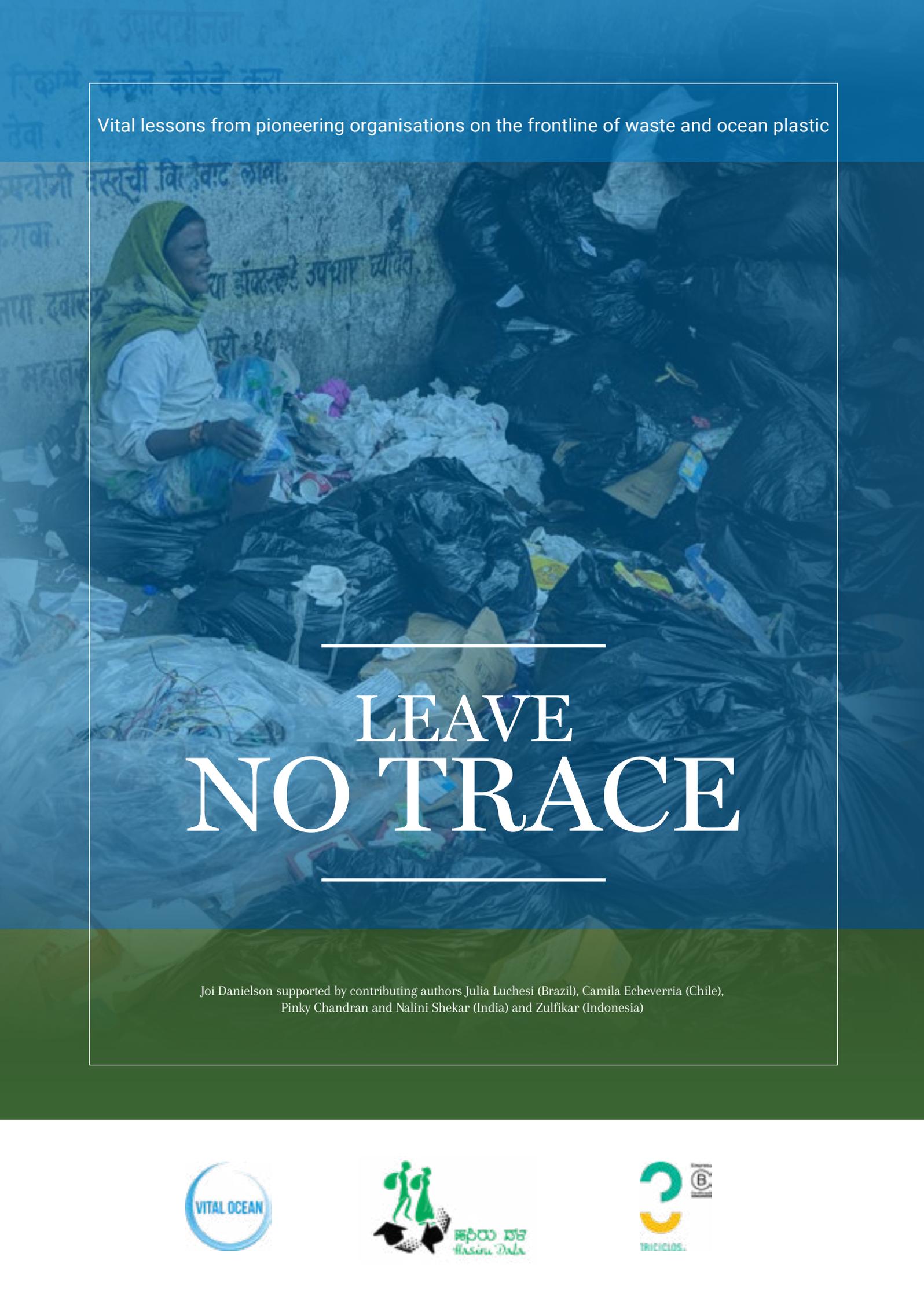


Vital lessons from pioneering organisations on the frontline of waste and ocean plastic



# LEAVE NO TRACE

Joi Danielson supported by contributing authors Julia Luchesi (Brazil), Camila Echeverria (Chile), Pinky Chandran and Nalini Shekar (India) and Zulfikar (Indonesia)





## Letter from Joi Danielson, Founder of Vital Ocean



JOI DANIELSON  
Founder, Vital Ocean,  
Partner, SYSTEMIQ,  
Program Director, Project STOP



This book has been an act of love. It was completed on the sidelines of building and running frontline waste programs at Hasiru Dala, TriCiclos and Project STOP. It's the report we wish had existed when we were starting our organisations. It includes what we've learned in our own endeavours, and what has worked for over 45 successful frontline organisations interviewed in four focal countries—Indonesia, India, Brazil, and Chile.

So often these kinds of reports—including my own past research —take a top-down, “what must be true” modelling approach to solving waste management and ocean plastic problems. But this report is bottom-up. We went into the world and asked those that had been successful on the frontlines how they did it. We hope that making the effort to cross the language barrier between English, Portuguese, Spanish, and Bahasa Indonesia will bring new insights into how sister organisations have solved the most important and common waste management challenges and inspire new collaborations between organisations.

Waste is collected on the frontlines. It can only be stopped from going into the ocean on the frontlines. While global leaders gather at international forums to talk about the crisis of ocean plastic, local leaders on the ground are rolling up their sleeves and getting things done. These are the heroes of waste management. Yet, their task is more difficult than it needs to be. In each country, they need to work around different but significant constraints in the waste system that can only be addressed at a policy level outside their control. They struggle to make the economics of waste management work due to the very low margins of recycling and minimal, if any, government or private sector support. They hear about the hundreds of millions of dollars earmarked for ocean plastic and waste solutions yet struggle to access these funds because they're too small, too informal, or don't communicate in a way that international donors need to feel comfortable. There needs to be a better way.

Waste has always been someone else's problem. The very nature of throwing waste “away”, out of sight, out of mind, transfers the responsibility to someone else. Some blame the government for not investing enough into waste management or for poor legislation. Some blame resin producers and consumer goods companies for flooding the market with plastic products (much of which is hard if not impossible to recycle economically). Some blame everyday people for burning garbage or dumping waste directly into the environment when they should know better (yet do not have access to functional waste collection services). When we blame, we transfer the problems to others. But what's needed is the sharing of responsibility across the entire manufacturing-to-waste value chain—by every stakeholder – especially to empower frontline organisations to do their job and scale their impact. This is how true change will happen.

Thank you for joining us on this journey.

# Acknowledgements

## CORE PROJECT TEAM

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- Zulfikar, Research partner
- Timothy Kipen, Research partner



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- Nalini Shekar, Co-Founder and Executive Director
- Pinky Chandran, Trustee



### TRICICLOS

- Julia Luchesi, Operations Manager
- Camila Echeverría, Consultant



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# Disclaimer

This report has been written by a team from Vital Ocean, HasiruDala and TriCiclos, which take full responsibility for the report's contents and conclusions. More than forty-five organisations were interviewed for this report. While they have provided significant input into the report's development, their participation does not necessarily imply endorsement of all the report's contents or conclusions.

## INTERVIEWED ORGANISATIONS

We thank the many organisations who gave us a glimpse into why their organisations have been so successful. This work is a celebration of all that they have achieved.

### BRAZIL

#### CICLO ORGÂNICO

- Vinícius Caldas Barbosa
- Lucas Chiabi

#### COOPERCAPS

- Telines Basílio (Carioca)

#### COOPERREGIÃO

#### COOPERATIVE

- Verônica Cardoso Costa de Souza
- Zaqueo Vieira

#### DOIS IRMÃOS COOPERATIVE

- Roberto Araujo da Silveira
- Everton Serpa da Silva

#### GIRAL

- Mateus Mendonça

#### LIGHT RECICLA

- Jasmin Lemke

#### MOVIMENTO NACIONAL DE CATADORES DE MATERIAIS RECICLÁVEIS (MNCR)

- Sandra Sampaio
- Carlos Henrique Nicolau

#### PIMP MY CARROÇA

- Carol Pires
- Letícia Tavares

#### PROJETO RELIX

- Gabriela Carlos
- Lina Rosa

#### RECICLO

- Thiago Rocha
- Andreza Livramento
- Fernando Campos

#### TRICICLOS

- Daniela Lerario
- Julia Luchesi

#### VERDECOOP

- Nildo José Lima da Silva
- Edinea Rodrigues dos Santos
- Sandoval Barreto Gomes Filho

#### YOUNGREEN COOPERATIVA

- Roger Koeppl
- Rafael Teixeira Escórcio Athayde

### CHILE

#### BUREO'S NET POSITIVA

- Ben Kneppers

#### FECUNDA PATAGONIA

- Paulina Monsalve Suter

#### MOVIMIENTO DE RECICLADORES DE BASE

- Soledad Mella

#### MUNICIPALIDAD DE LA PINTANA

- Patricio Rogers Navarrete Benavides

#### MUNICIPALIDAD DE PEÑALOLÉN

- Marcelo Minguez

#### FUNDACIÓN BASURA

- Macarena Guajardo
- Belén Contador

#### TRICICLOS

- Milca Bolaño
- Agustín Correa
- Camila Echeverría

#### ZERO WASTE NETWORK

- María José García
- Betsy Ojeda Fuentes
- Magdalena Donoso

### INDIA

#### CHINTAN ENVIRONMENTAL RESEARCH AND ACTION GROUP

- Bharati Chaturvedi

#### HASIRU DALA

- Nalini Shekar
- Pinky Chandran

#### HASIRU DALA INNOVATIONS

- Shekar Prabhakar

#### KKPKP - KAGAD, KACH, PATRA, KASHTAKARI PANCHAYAT

- Lakshmi Narayanan

#### PLASTICS FOR CHANGE

- Andrew Almack

#### STREE MUKTI SANGHATANA (SMS)

- Jyoti Mhapsekar

#### SWACH, PUNE

- Sangeetha John

#### SWACHHA ECO SOLUTIONS

- Victoria Joslin Dsouza
- Rajesh Babu
- Raghavan Vinay

#### VRECYCLE WASTE MANAGEMENT SERVICES

- Clinton Vaz

### INDONESIA

#### CIBUNUT BERWARNA

- Tini Martini Tapran
- Herman Sukmana

#### ECOBALI RECYCLING

- Paola Cannucciari

#### RUMAH KOMPOS PADANGTEGAL

- Pak Supardi

#### PRAMUKA ISLAND

- Maharia

#### PROJECT STOP

- Jason Hale
- Andre Kuncoroyekti
- Alexandre Kremer
- Putra Perdana Kusuma
- Nur Anik

#### TEMESI RECYCLING

- Wayan Cakra
- David Kuper

#### WASTE4CHANGE

- Chairul Ruskandi
- Muhammad Andriansyah

#### YAKSA PELESTARI BUMI BERKELANJUTAN (YPBB)

- Melly

#### ROBRIES

- Syukriatun Ni'amah



# 7 Appendix

## ORGANISATIONAL PROFILES

### SELECTING BEST PRACTICE ORGANISATIONS

Featured organisations were initially chosen based on their proven ability to solve one or more of the five “base” challenges studied - changing behaviour at scale, waste picker inclusion, affordable collection, recycling plastics economically and/or processing organics without a loss. Organisations were then visited and further prioritised based on field observations. The criteria we used are outlined below:

Changing behaviour at scale	<ul style="list-style-type: none"> <li>• More than 75% of the community served separates its waste</li> <li>• Measurable change in societal views</li> <li>• Measurable change in private sector choices</li> <li>• Measurable change in government legislation</li> </ul>
Waste picker inclusion	<ul style="list-style-type: none"> <li>• Waste pickers are part of the waste system (i.e., not only scavenging high-value waste from trash and selling to junk shops)</li> <li>• Waste picker livelihoods have been improved</li> </ul>
Affordable collection	<ul style="list-style-type: none"> <li>• Waste collection system that is economically sustainable (this could be through municipal or other subsidy-style support) and ideally in operation three or more years</li> </ul>
Recycling plastics economically	<ul style="list-style-type: none"> <li>• 80% diversion from landfill</li> <li>• Sell or process low-value plastics (e.g., thin film or multilayer plastics, fishing lines)</li> <li>• Able to build economically sustainable businesses with strong environmental and social safeguards (and sometimes influence others to)</li> </ul>
Processing organics without a loss	<ul style="list-style-type: none"> <li>• Valorising organic waste sustainably</li> </ul>

What follows are organisational profiles from most organisations featured in the paper, accompanied by a business canvas outlining their core business design, key activities, revenue model, primary partners, customer base, and unique value propositions.



**QUICK FACTS**

**Name:** Bureo, Proyecto Net Positiva  
**Organisation type:** B-company  
**Location:** Chile  
**Founded:** 2013  
**Operation:** Fishing net collection, sortation, processing, re-purposing  
**Quantity handled:** 300 tons  
**Communities involved:** 26  
**Website:** <https://bureo.co/pages/net-positiva>

**BUREO'S NET POSITIVA PROGRAM**

The company **Bureo** started an end-of-life fishnet collection and recycling program, **Net Positiva**, with community fishermen in Chile. Paying for used fishing nets (or pieces of nets) from commercial and artisanal fishermen, the scheme keeps netting out of the ocean (where it is the most destructive form of ocean plastic to marine life). The nets, generally made of Nylon 6, are transformed into high-value items like skateboards, sunglasses, and Frisbees—or sold to other manufactures interested in using “materials of purpose” (waste that is both traceable and has a story of hope). One of their signature products, the Minnow, is the first skateboard made from recycled ocean plastic.

The company was formed in 2013 by three American engineers who shared a passion for the ocean and wanted to find a way to help save it from plastic pollution. When they realised the severity of the problem of fishing nets being disposed of directly into the ocean, they decided to look for a solution. By realizing that the nets were an abundant resource—rather than a problem—their goal became to collect them

before they reached the open water in order to turn them into something valuable.

Net Positiva works directly with the fishing communities and the industry. Fishermen learn about the harm done by discarded fishing nets and are offered the option to sell or donate their worn gear. There are now agreements with 15 commercial fishing groups and 12 artisanal fishing communities (representing more than 300 tons of nets per year). Money saved due to donated nets is reinvested in the local community or given to environmental organisations. Used nets are sent to Santiago, where they are recycled into pellets (with each step of the process being fully traceable). Final manufactured items can be traced back to the fishing village from which the nets were collected.

Bureo currently has partnerships with more than six companies throughout the United States and South America. Their goal is to collect more than 1,000 tons per year of plastic nets by the year 2020 through expansion into Argentina and Peru.



**BUSINESS CANVAS: BUREO – PROYECTO NET POSITIVA**

<b>ORGANISATION</b>	Bureo – Proyecto Net Positiva	<b>ORGANISATION TYPE</b>	Benefit (B) Company						
<b>Key partners</b>	<ul style="list-style-type: none"> <li>Fishing community (commercial and artisanal)</li> <li>Companies purchasing recycled social plastic</li> <li>Social impact investors</li> </ul>	<b>Key activities</b>	<ul style="list-style-type: none"> <li>Negotiate with commercial and artisanal fishermen</li> <li>Collect nets at end of life from fishing community</li> <li>Collect, clean, process nets (generally outsourced locally)</li> <li>Sell products through online platform (purchase them at cost from the producers)</li> <li>Sell “social plastic” recycled material to partnering companies in the form of pellets</li> </ul>	<b>Value proposition</b>	<p><b>Aim:</b> To collect end-of-life fishing nets (the most harmful form of ocean plastic) and create something valuable instead of ocean waste</p> <p><b>Value proposition:</b> provide fishermen an outlet for their used nets other than disposal in the sea (which ultimately hurts their own livelihood)</p> <p>Provide consumers with products that have been made from recycled materials and can be traced back to source</p>	<b>Waste output</b>	<p>Recycled materials: Plastic pellets</p> <p>Retail products: Skateboards, Frisbees, sunglasses, clothing, games, surf items</p>	<b>Customers served</b>	<p>Fishing community: outlet for nets</p> <p>Consumer product companies: recycled material</p> <p>Consumers: final products (skateboards, frisbees, sunglasses)</p>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Online platform</li> <li>Local partners/ managers of outsourced tasks</li> <li>Fisherman community</li> </ul>	<b>Key legislation</b>	<p>REP: Extended user responsibility increasing requirements for end of life certification</p>						
<b>Cost structure</b>	<ul style="list-style-type: none"> <li>Staff salaries</li> <li>Administration costs</li> <li>Purchase of nets and/or donation to local environmental programs</li> <li>Production outsourcing costs in each community, paying local partners to manage production process and supply chain</li> </ul>		<b>Revenue structure</b>						
			<ul style="list-style-type: none"> <li>Retail sale of fishing net-derived products (skateboards, etc.)</li> <li>Sale of recycled fishing net material in pellet form</li> </ul>						



**QUICK FACTS**

**Name:** Chintan Environmental Research and Action Group  
**Organisation type:** nongovernment organisation (NGO)  
**Location:** Delhi, India  
**Founded:** 1999  
**Operation:** Quantity Handled: Over 60,000 residences, shops, and estates (and New Delhi railway Station)  
**Waste pickers inclusion:** Over 15,000 through Safai Sena  
**Website:** <https://www.chintan-india.org/index.htm>, <http://www.safaisena.net/>



workers to upgrade their work via the concept of green jobs. Safai Sena offers a range of services, including doorstep collection of waste and training to all members.

Chintan is also working on breaking negative attitudes about composting by investing in composters with improved aesthetics and behaviour change targeted at middle- and upper-class communities. Eighteen learning centres impart training to over 2,300 children of waste workers. Their program **No Child In Trash** is premised on the importance of waste workers' children having decent childhoods.



**CHINTAN ENVIRONMENTAL RESEARCH AND ACTION GROUP**

Chintan was launched in 1999 to address issues of sustainable consumption and social and environmental justice. Bharati Chaturvedi, Chintan's founder, aimed to address issues of waste picker exclusion and marginalization through a new kind partnership with the informal sector that provides essential services in managing waste to move towards an environmentally and socially just world.

Chintan's main approach involves research and advocacy, environmental governance, addressing issues faced by the children of waste pickers, and building out the capacity of informal waste workers.

In 2001, Chintan mobilised waste pickers, doorstep waste collectors, small junk dealers, itinerant and other small buyers, and other recyclers to form **Safai Sena**, which translates as "an army of cleaners" (formerly named Rashtriya Safai Seva Sangathan). It was officially registered in 2009 with a vision to enable adult waste

**BUSINESS CANVAS: CHINTAN ENVIRONMENTAL RESEARCH AND ACTION GROUP**

ORGANISATION	CHINTAN	ORGANISATION TYPE	NGO	
<b>Key partners</b>	<b>Key activities</b>	<b>Value proposition</b>	<b>Waste output</b>	<b>Customers served</b>
<ul style="list-style-type: none"> <li>Waste pickers and scrap dealers</li> <li>Safai Sena</li> <li>Foundations</li> <li>National government</li> <li>State governments</li> <li>Media</li> <li>Alliance of Indian Waste Pickers</li> <li>Like-minded organizations</li> <li>Police</li> </ul>	<ul style="list-style-type: none"> <li>Facilitating and Organizing: training workers in the informal waste economy, including waste pickers and junk dealers</li> <li>Collaborative advocacy</li> <li>Campaign for environmental causes</li> <li>Developing micro entrepreneurs</li> <li>Waste collection from households</li> <li>Promote composting</li> <li>Facilitated MRFs, membership organizations, e waste groups etc.</li> </ul>	<p><b>Aim:</b> Create responsible waste management</p> <p><b>Value proposition:</b> Use data for advocacy and providing responsible, transparent management services for the entire waste stream</p>	<ul style="list-style-type: none"> <li>Organic: Windrow composting and black soldier fly</li> <li>Recyclables: Handled by waste picker entrepreneurs</li> </ul>	<ul style="list-style-type: none"> <li>Households: collection</li> <li>Private companies: collection and consulting services</li> </ul>
<b>Key Resources</b>			<b>Impact</b>	
<ul style="list-style-type: none"> <li>MRFs</li> <li>Published research books</li> </ul>			<ul style="list-style-type: none"> <li>Promoted Safai Sena, which has over 10,000 members</li> <li>Research studies in waste, air pollution, and other environmental issues</li> </ul>	
<b>Key legislation</b>				
<ul style="list-style-type: none"> <li>Solid waste management Rules, 2016</li> <li>Plastic Waste Management Rules, 2016</li> <li>Amendment to Plastic Waste Rules, 2018</li> </ul>				
<b>Cost structure</b>	<b>Revenue structure</b>			
<ul style="list-style-type: none"> <li>Staff salaries</li> <li>Facility operational costs (electricity, maintenance)</li> <li>Vehicle costs (maintenance, fuel)</li> <li>Safety equipment</li> <li>Administration costs</li> </ul>	<ul style="list-style-type: none"> <li>Foundations</li> <li>Grants, donations</li> <li>Consulting</li> </ul>			



**QUICK FACTS**

**Name:** Cibunut Berwarna (Coloured Cibunut)  
**Organisation type:** Local government, supported by foundations  
**Location:** Bandung, Jawa Barat, Indonesia  
**Founded:** 2015  
**Operation:** Education, collection, separation, composting  
**Quantity handled:** Under 2 tons/day  
**Households served:** Under 300 (less than 1% of city)

**CIBUNUT BERWARNA**

In 2015, the municipal government of Bandung started a program called **Kawasan Bebas Sampah** (Zero Waste Area). This program aims to provide training and advice to sub-districts in Bandung to reduce their waste in order to decrease the burden on the city landfill. Six sub-districts were selected to implement this program, with Cibunut being one of them.

Cibunut is characterised by its narrow streets, which cars cannot enter. It's also highly populated with significant social and environmental issues. Under a new leader of the sub-district, Om Ibo, things have changed significantly, including the implementing of zero-waste programs.

Many stakeholders were brought into the process, including Tini Martini Tapran, a passionate environmental activist who, at the Mother Earth Foundation in the Philippines, received training in community organizing. Because people in Bandung appreciate creative activities, an awareness program where citizens painted their homes—with neighbourhoods having their own colour and theme—was used to increase citizen awareness of environmental issues and programmes and build community pride.

The program is the inspiration for the name **Cibunut Berwarna** (Coloured Cibunut). The program also implements methods for people to recycle both organic waste and recyclables. Currently the total amount of waste generated in Cibunut is about 161 kilograms per day (from about 2,000 residents). This is an average of 0.08 kilograms per day per citizen, far less than the average for Indonesia (0.5–0.7 kilograms per day per citizen).



**BUSINESS CANVAS: CIBUNUT BERWARNA**

<b>ORGANISATION</b>	Cibunut Berwarna	<b>ORGANISATION TYPE</b>	Local government	
<b>Key partners</b>	<b>Key activities</b>	<b>Value proposition</b>	<b>Waste output</b>	<b>Customers served</b>
<ul style="list-style-type: none"> <li>Sub-district leadership</li> <li>Bandung municipality government</li> <li>Bandung Cleanliness Corporation</li> <li>Donors and partners such as local university alumni, companies, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Promoting behaviour change to reduce waste</li> <li>Door-to-door waste collection by Mamang Sampah (Waste Guy)</li> <li>Community and household organic composting</li> <li>Recycling through waste bank</li> </ul>	<p><b>Aim:</b> : Reduce waste at sub-district level to decrease burden on city landfill</p> <p><b>Value proposition:</b> Provide ways to reduce waste locally while increasing social life quality</p>	<ul style="list-style-type: none"> <li>Recyclables through waste bank (555 kg/month)</li> <li>Waste collection (832 kg/month)</li> <li>Compost (225 kg/month)</li> </ul>	<ul style="list-style-type: none"> <li>Residents of Cibunut subdistrict</li> </ul>
<b>Key Resources</b>			<b>Impact</b>	
<ul style="list-style-type: none"> <li>Private waste collector</li> <li>Waste bank operators</li> <li>Organic processing assets</li> </ul>			<ul style="list-style-type: none"> <li>Reduce waste to landfill to 0.08 kg/day per capita</li> </ul>	
<b>Key legislation</b>	Bandung Local Regulation 9, 2011: Waste Management			
<b>Cost structure</b>			<b>Revenue structure</b>	
<ul style="list-style-type: none"> <li>Collection worker salary (Waste Guy, 4 workers at Rp 500k/month)</li> <li>Waste Guy carts</li> <li>All other costs paid on voluntary basis by community</li> </ul>			<ul style="list-style-type: none"> <li>Donations from foundations and partners to fund door-to-door education, training, and procuring technology</li> <li>Primarily volunteer driven without salary</li> </ul>	



**QUICK FACTS**

**Name:** Ciclo Organico  
**Organization type:** Company  
**Location:** Rio de Janeiro, Brazil  
**Founded:** 2017  
**Operation:** Collection, composting  
**Quantity handled:** 25 tons/month  
**Households served:** 900  
**Website:** <https://cicloorganico.com.br/>

**CICLO ORGANICO**

The slogan of **Ciclo Orgânico** is “the destiny of your trash can change the destiny of the planet.” It is a self-sustainable business model providing a unique solution to the processing of household organic waste in Rio de Janeiro, Brazil. Its founder, Luke Chiabi, had been studying different composting methods during his time in university. After several years of perfecting his technique—and with the help of the Shell Iniciativa Jovem program—he decided to launch a business in the Botafogo neighbourhood, using an aerobic composting technique based on microorganisms to divert organic waste from landfill.

Clients of Ciclo Organico pay a monthly fee for the service. For this fee, they get a compost bin, biodegradable collection bag, weekly pick-up service, and two kilograms of compost per month (along with garden seeds and other surprise gifts). Pick-up is done by waste pickers using bicycles; routes have been carefully planned for

optimisation. The organics are accumulated in a common area of the city which serves not only as the composting site, but also as a green space open to the public. The composting process takes approximately 3 to 4 months and compost is bagged, then picked up by clients or sold for a profit.

To date, Ciclo Organico has 900 household subscribers and processes approximately 25 tons per month. Because of its rapid growth—from 300 to 850 households in less than a year—they are currently developing a new location where they will be able to process more than 100 tons per month, with space to eventually process up to 500 tons.



**BUSINESS CANVAS: CICLO ORGANICO**

<b>ORGANISATION</b>	Ciclo Orgânico	<b>ORGANISATION TYPE</b>	Social enterprise		
<b>Key partners</b>	<ul style="list-style-type: none"> <li>Shell Iniciativa Jovem (start-up phase)</li> </ul>	<b>Key activities</b>	<b>Value proposition</b>	<b>Waste output</b>	<b>Customers served</b>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Land</li> <li>Bicycles</li> <li>Composting methodology</li> </ul>	<ul style="list-style-type: none"> <li>Deliver compost bins and biodegradable sacks to clients while providing education on proper separation of organic waste</li> <li>Weekly collection via bicycle</li> <li>Process organics using aerobic micro organisms to produce compost</li> <li>Conduct community days at the composting space, which results in:                             <ul style="list-style-type: none"> <li>general environmental education</li> <li>demonstration of composting techniques</li> <li>volunteer labour</li> <li>publicity</li> </ul> </li> </ul>	<p><b>Aim:</b> : Help create a community in which trash is a solution rather than a problem</p> <p><b>Value proposition:</b> Provide an alternative outlet for organic waste, then provide compost, gifts, and community beautification</p>	<ul style="list-style-type: none"> <li>Compost: Aerobic microorganism process, with dry leaves mixed with waste in rotated pyramid-like mounds (also sifted to eliminate plastics)</li> </ul>	<ul style="list-style-type: none"> <li>Households: door-to-door collection and 2 kg of compost monthly (along with seeds and a monthly gift)</li> <li>Businesses/ Condominiums: Collection services</li> </ul>
<b>Key legislation</b>	<ul style="list-style-type: none"> <li>National Law of Solid Waste, 12.305\10</li> </ul>			<b>Impact</b>	
		<b>Cost structure</b>	<b>Revenue structure</b>		
		<ul style="list-style-type: none"> <li>Staff salaries (compost processors and bicycle collectors)</li> <li>Operational costs</li> <li>Composting equipment</li> <li>Land</li> <li>Administration costs</li> </ul>	<ul style="list-style-type: none"> <li>Membership fees (monthly fees based on service requested, i.e. frequency of pick-ups and size of buckets)</li> <li>Sale of compost</li> </ul>		



**QUICK FACTS**

**Name:** CooperRegião Cooperative  
**Organisation type:** Waste picker cooperative  
**Location:** Londrina, Brazil  
**Founded:** 2009  
**Members:** 127  
**Operation:** Full waste stream collection, sortation, baling  
**Quantity handled:** 350 tons/month  
**Households served:** 78,000 households, 14 public and private contracts  
**Website:** <http://www.cooperregiao.com/site/>

**COOPERREGIÃO COOPERATIVE**

CooperRegião Cooperative, located in Londrina, was the first waste picker cooperative to hold a contract with the Brazilian government. It gave them formal responsibility for collecting waste from every local household and sorting out recyclables.

Beginning in 2008, the 32 associations of waste pickers in Londrina began discussing the possibility of uniting to form a cooperative. A year later the municipality, acting under the recently approved national policy on solid waste (PNRS), appointed a social worker to work with the associations in forming a cooperative. After providing the necessary training, the cooperative came into being with 20 members from 7 associations. Their goal was to dignify the work of waste pickers, promoting social inclusion and society-wide improvement in proper waste management.

A first contract was signed in 2010. Under it the task of separating and selling materials was laid out. As time progressed, expanded goals and responsibilities were shared by the government, which provided a better income and more room for growth for the coop. Today, CooperRegião performs waste collection, sortation, and sales for more than 78,000 households and holds 14 additional contracts with private and public entities, resulting in nearly 350 tons collected and processed per month, allowing them to provide training and salaries to their current 127 members.



**BUSINESS CANVAS: COOPERREGIÃO COOPERATIVE**

<b>ORGANISATION</b>	CooperRegião Cooperative	<b>ORGANISATION TYPE</b>	Waste picker cooperative	
<b>Key partners</b>	<ul style="list-style-type: none"> <li>Government</li> <li>University: students perform quality control as part of their studies</li> </ul>	<b>Value proposition</b>	<b>Waste output</b>	<b>Customers served</b>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Trucks</li> <li>Sorting facilities with conveyor belt, compactor</li> </ul>	<p><b>Aim:</b> Dignify the work of waste pickers and promote social inclusion for them in their work to improve society through proper waste management</p> <p><b>Value proposition to government:</b> Provide an integrated and reliable waste management solution for the community, including recyclable waste pick-up and sortation services</p>	<ul style="list-style-type: none"> <li>Sorted and baled recyclables</li> </ul>	<ul style="list-style-type: none"> <li>Government (outsourcing of waste services)</li> <li>Private citizens</li> <li>Private companies and organizations</li> </ul>
<b>Key legislation</b>	<ul style="list-style-type: none"> <li>PNRS: national solid waste policy that specifically directs waste pickers to do collection work</li> </ul>		<b>Impact</b>	
<b>Cost structure</b>	<ul style="list-style-type: none"> <li>Staff salaries</li> <li>Facility operational costs (electricity, maintenance, rent)</li> <li>Vehicle costs (maintenance, fuel)</li> <li>Administration costs</li> </ul>	<b>Revenue structure</b>		
			<ul style="list-style-type: none"> <li>Monthly collection of 350 tons of waste</li> <li>Stable living for 127 waste pickers</li> </ul>	
				<ul style="list-style-type: none"> <li>Government contract (fee per household served and payment of facility rent and social security taxes of members)</li> <li>Business waste collection fees</li> <li>Recyclable material sales</li> </ul>



**QUICK FACTS**

**Name:** Dois Irmãos Cooperative  
**Organisation type:** Waste picker cooperative  
**Location:** Dois Irmãos, Brazil  
**Founded:** 1994  
**Operation:** Full waste stream collection, sortation, washing, shredding, pelletizing  
**Quantity handled:** 110 Tons/month  
**Website:** <https://www.facebook.com/cooperativarecicladoresdoisirmaos/>

**DOIS IRMÃOS COOPERATIVE**

The **Dois Irmãos** waste picker cooperative is located 60 kilometres from Porto Alegre, Brazil. It currently employs 38 waste pickers and provides 100 percent of the city’s waste collection. It’s roots date back to 1994, when a local couple with a background in waste management established a waste services entity. In order to obtain an expanded contract that included collection it was reclassified in 2009 into a cooperative.

The goal is to find the right destination for the city’s waste while providing gainful employment for members. With nearly 25 years of ever-evolving contracts with the government and industry partners, Dois Irmãos has come to work not only as a collector and sorter of recyclables, but also a purchaser, processor, and environmental educator.

The primary service is daily collection of source-separated waste produced by the city’s 31,000 inhabitants. This includes organics, recyclable, and non-recyclable material. It is then sorted

at their facility and processed before being sold. The cooperative adds significant value by washing, shredding, and pelletizing waste plastics. The equipment was purchased in part through partnerships with private companies such as Braskem, Ambev, Funasa, and Abipek. By vertically integrating plastics recycling, the coop not only increases the value of their waste materials enough to operate an economically sustainable waste organisation, but also to pay members more than double the minimum wage (very uncommon for these types of jobs in a remote area).

The extra margin also gives them the ability to support their sister cooperatives. In addition to 100 percent collection of their city’s waste, they purchase approximately 15 tons per month of otherwise low-value materials from nearby cooperatives. This provides a market for certain materials that would not otherwise exist. They can also pay above market rates, thereby sharing their prosperity with sister organisations.



**BUSINESS CANVAS: DOIS IRMÃOS COOPERATIVE**

<b>ORGANISATION</b>	Dois Irmãos Cooperative	<b>ORGANISATION TYPE</b>	Waste picker cooperative						
<b>Key partners</b>	<ul style="list-style-type: none"> <li>Government</li> <li>Industry (Braskem, Ambev, Funasa, and Abipek)</li> </ul>	<b>Key activities</b>	<ul style="list-style-type: none"> <li>Educate community on how to properly clean and separate materials with door-to-door training</li> <li>Collect waste from clients at pre-arranged times</li> <li>Collect, sort, and process materials</li> </ul>	<b>Value proposition</b>	<p><b>Aim:</b> To find the correct destination for waste produced by the city’s residents while also providing gainful employment for the cooperative’s members</p> <p><b>Value proposition to government:</b> Provide an integrated and reliable waste management solution for 100% of the community, including full stream pick-up and sortation services</p> <p><b>Value proposition to other cooperatives:</b> Provide a market for hard to recycle materials and pay above market prices</p>	<b>Waste output</b>	<ul style="list-style-type: none"> <li>Sorted and baled non-plastic recyclables</li> <li>Recycled plastic pellets</li> </ul>	<b>Customers served</b>	<ul style="list-style-type: none"> <li>Government</li> <li>Private citizens</li> <li>Industry partners as purchasers</li> </ul>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Trucks</li> <li>Sorting facilities with conveyor, washer, shredder, pelletiser, compactor</li> </ul>	<b>Impact</b>		<ul style="list-style-type: none"> <li>Collection of 110 tons per month</li> <li>Stable living for 38 waste pickers</li> <li>Collection services for 30,470 people</li> </ul>					
<b>Key legislation</b>	<ul style="list-style-type: none"> <li>National Law of Solid Waste, 12.305\10: Gives waste pickers the right to carry out collection work</li> </ul>	<b>Cost structure</b>		<b>Revenue structure</b>					
	<ul style="list-style-type: none"> <li>Staff salaries</li> <li>Facility operational costs (electricity, maintenance, rent for compactor, washer, shredder, pelletiser)</li> <li>Vehicle costs (maintenance, fuel)</li> <li>Administration costs</li> </ul>	<ul style="list-style-type: none"> <li>Government contract paying facility rent and utilities directly, in addition to salaries of truck drivers and vehicle fuel expenses (i.e., most operating costs)</li> <li>Collection service fees</li> <li>Non-plastic recyclable</li> <li>Recycled plastic pellet</li> </ul>							



**QUICK FACTS**

**Name:** ecoBali Recycling  
**Organisation type:** Company  
**Location:** Bali, Indonesia  
**Founded:** 2006  
**Operation:** Non-organic collection, recyclable sales, teaching, consulting  
**Quantity handled:** 60–70 tons/month  
**Website:** <https://eco-bali.com/>



**ECOBALI RECYCLING**

ecoBali was founded in 2006 by a group of environmentalists who wanted to do something positive about Bali’s growing waste issues. Their initial goal was to change how people thought about, and dealt with, waste.

Eco Bali provides responsible waste management that leads to a more sustainable lifestyle. They try to empower people to live zero-waste lifestyles by teaching waste reduction strategies, providing tools like reusable bags, and ensuring that what’s left is recycled or properly disposed of in legal landfills. With eco-Bali services, customers are guaranteed their waste will be managed responsibly.

Eco Bali distributes colourful bags to households and businesses (as opposed to plastic bins). Green bags are used for paper and cardboard, red are for glass, metal, plastic, and other non-organic waste. Organic material is not collected, though home composting kits are available for purchase. When bags are collected—roughly once a week—they are brought to a manual sorting station where recyclables are further sorted, cleaned, and baled.

Their certified waste bank program—**Ini Bukan**



**Sampah** (“This is not waste”)—involves the purchase of recyclable materials from schools and homes. This is in partnership with Tetra Pak, the Body Shop, AQUA, and other brands as part of a voluntary EPR program.

Eco Bali has enjoyed a great deal of success to date, having processed more than 5,000 tons of primarily non-organic waste (reducing landfill loads by 70 to 80 percent through recycling and composting programs). They’ve co-founded **Waste4Change** with **Greeneration Indonesia** in order to scale their model to Java, held more than 2,500 eco-training sessions with households and businesses, and conducted over 300 education training sessions.

**BUSINESS CANVAS: ECOBALI RECYCLING**

<b>ORGANISATION</b>	ecoBali	<b>ORGANISATION TYPE</b>	Company	
<b>Key partners</b>	<ul style="list-style-type: none"> <li>TetraPak</li> <li>Danone Aqua</li> <li>Body Shop</li> <li>Bali Buda</li> <li>Waste4Change / Greeneration</li> </ul>	<b>Value proposition</b>	<b>Waste output</b>	<b>Customers served</b>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Trucks</li> <li>Balers</li> <li>Bag system</li> <li>Sorting facility</li> </ul>	<p><b>Aim:</b> Enable zero-waste lifestyles</p> <p><b>Value proposition:</b> Responsible waste management and a sustainable lifestyle on the Island of Bali</p>	<ul style="list-style-type: none"> <li>Sorted and baled recyclables</li> <li>Composters (from recycled TetraPak containers)</li> </ul>	<ul style="list-style-type: none"> <li>Households: collection and composting</li> <li>Private companies: collection and event management</li> <li>Schools: waste bank</li> <li>NGOs, government: consulting services</li> </ul>
<b>Key legislation</b>	<ul style="list-style-type: none"> <li>None specified</li> </ul>		<b>Impact</b>	
			<ul style="list-style-type: none"> <li>Collected and processed 5,000 tons of waste</li> <li>Waste reduction of 70–80%</li> <li>Over 300 education sessions</li> <li>Over 2,500 training sessions to households and businesses</li> <li>Over 350 composting units sold</li> <li>Over 18 tons of plastic bags recycled</li> </ul>	
<b>Cost structure</b>	<ul style="list-style-type: none"> <li>Staff salaries</li> <li>Facility operational costs (electricity, maintenance)</li> <li>Vehicle costs (maintenance, petrol)</li> <li>Waste bank recyclable purchases</li> <li>Administration costs</li> </ul>		<b>Revenue structure</b>	
			<ul style="list-style-type: none"> <li>Collection fees from households and businesses</li> <li>Recyclable material sales (from household/business collection, waste bank purchases, and Tetra Pak wholesaler)</li> <li>Retail store (Eco store) with reusable bags, composting units, wine-bottle glasses, bins, recycled roofing tiles</li> <li>Consulting service fees</li> <li>Event waste management</li> </ul>	



**QUICK FACTS**

**Name:** Fecunda Patagonia  
**Organisation type:** Company  
**Location:** Coyhaique, Patagonia, Chile  
**Founded:** 2016  
**Operation:** Education, collection, sorting  
**Quantity handled:** 10–15 tons/month  
**Website:** <https://www.facebook.com/fecundapatagonia/>



**FECUNDA PATAGONIA**

Fecunda Patagonia is focused on both community education and the collection and sortation of recyclables in southern Chile’s remote Patagonia region. It began when a group of school children were learning about recycling and came to the gloomy realization that no recycling facilities existed in their region. Their mothers decided to take action and open the first recycling collection and sortation point in Coyhaique, Chile, in 2016. Fecunda Patagonia operates the clean point, accepting and sorting high-value recyclable materials from local citizens. They then handle the logistics of sending it to Santiago, over 1,600 kilometres away, for processing.

The goal is to “realise concrete and significant contributions to their community—from technical and human knowledge—in future actions that reflect our seal with environmental and social awareness [by] generating, developing, and executing projects, initiatives, and innovative answers oriented to solve current social problems and environmental issues in the Aysén region of Chile.”

In addition to recyclable drop-offs, they provide recyclable collection services at local businesses and operate a small store where bins, home composters, and environmentally sustainable products like reusable diapers are sold. They emphasise community education about the importance of material separation and cleaning and have reached more than 3,000 students and adults in their two years of operation. Recently a contract with Servicio Natural de Turismo of Chile (SERNATUR) was signed covering environmental education at 14 establishments within the region of Aysén. They have also been heavily involved in several local campaigns, such as the Recycling of Batteries in Aysén, in which 23 tons of used batteries were collected in five days. A campaign to build a supply chain to properly recycle glass is underway.

Because Patagonia, a geographically challenging region with two million people spanning Chile and Argentina, does not have any material processing plants (and is approximately a 30-hour drive from Santiago), logistics is a constant challenge. To overcome this, creative ways are being developed to secure low-cost logistical support from companies who would otherwise be making the trip back to Santiago with empty trucks.



**BUSINESS CANVAS: FECUNDA PATAGONIA**

<b>ORGANISATION</b>	Fecunda Patagonia	<b>ORGANISATION TYPE</b>	Company		
<b>Key partners</b>	<ul style="list-style-type: none"> <li>Government</li> <li>Cristalerías Chile</li> </ul>	<b>Key activities</b>	<b>Value proposition</b>	<b>Waste output</b>	<b>Customers served</b>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Vehicle for material collection</li> <li>Aggregation/ sortation facility with baler</li> </ul>	<ul style="list-style-type: none"> <li>Educate business, schools, and organizations on how to properly clean and separate materials</li> <li>Collect pre-sorted and cleaned recyclable materials from local business and organizations</li> <li>Hold special campaigns to collect specific materials, such as batteries (23 tons thus far)</li> <li>Collect, sort, and bail materials</li> <li>Organise transportation of recyclables back to Santiago</li> <li>Facilitate visits from schools and other organizations to the sorting facilities</li> </ul>	<p><b>Aim:</b> Increase recycling rate in the Aysén region of Patagonia and decrease landfill volume</p> <p><b>Value proposition:</b> Offer the community reliable recycling services and environmentally sustainable products</p>	<ul style="list-style-type: none"> <li>Sorted and baled materials</li> </ul>	<ul style="list-style-type: none"> <li>Members: 100 who recycle using clean point</li> <li>Local businesses/ collection services</li> <li>Students: 3,000 educated on environmental responsibility</li> <li>Material purchasers: provided with a new source of material</li> </ul>
<b>Key legislation</b>	<ul style="list-style-type: none"> <li>REP: Extended user responsibility law of Chile (waiting to see the effects)</li> </ul>			<b>Impact</b>	
<b>Cost structure</b>	<ul style="list-style-type: none"> <li>Logistics fees to deliver materials to Santiago</li> <li>Staff salaries</li> <li>Operational costs (electricity)</li> <li>Facility rent</li> <li>Administrative fees</li> <li>Leasing costs (vehicle, compactor)</li> <li>Vehicle cost (maintenance, petrol)</li> </ul>		<b>Revenue structure</b>		
			<ul style="list-style-type: none"> <li>Business collection fee (fixed model varying by the number of collection trips per month)</li> <li>Recycling material sales to buyers in Santiago</li> <li>Funds raised from government sponsored contests</li> <li>Contract with agencies to conduct environmental trainings</li> <li>Sales of environmental products at retail store</li> </ul>		



**QUICK FACTS**

**Name:** Fundación Basura  
**Organisation type:** Non-profit  
**Location:** Santiago, Chile  
**Formed:** 2015  
**Operations:** Waste consulting, education, public policy, event waste management  
**Community reached:** Over 15,000  
**Website:** <https://www.fundacionbasura.org/>

**FUNDACIÓN BASURA**

Fundación Basura is a non-profit founded in 2015 in Santiago, Chile. It focuses on raising community awareness that that trash does not exist—that in nature there’s no such thing as trash. Founder Macarena Guajardo, while living in Germany, was inspired by the cultural movement happening there towards the revalorization—rather than simple disposal—of waste.

She created a website dedicated to ways trash can be reused in architectural design and art. Upon returning to Chile, she took her passion one step further and began urban interventions to raise awareness about waste issues. Eventually, the idea was transformed into a more comprehensive organisational model with the aim of addressing and promoting the zero-waste concept.

The organization uses a diverse set of tactics, all built around the zero-waste lifestyle. Revenue mostly comes from contracting their Zero Waste Challenge waste management services to local events. But they don’t simply collect waste for recycling and composting. Instead, they offer advice and consulting on how to run a waste-free

event. To date, Fundación Basura has worked for 42 events, preventing the production of 24 tons of waste. Their most successful effort to date saw recovery of 99 percent of waste generated.

They also offer a Zero Waste Academy, where 20 people are selected to complete a series of eight experiential courses teaching how to implement a zero-waste lifestyle. The Academy has been attended by 230 people and an impressive 11,000 have taken courses online. Fundación Basura also offers a Zero-Waste Stamp to organizations who prove their operations are waste neutral. Finally, they host massive zero-waste events where influential members of society come together to discuss different viewpoints around waste management principles and legislation, thereby promoting active dialog and supporting the transition to a zero-waste culture.

Most importantly, Fundación Basura has found success teaching the benefits of living a waste-free life—and that this should be a common desire (rather than obligation). It is emphasised that humans are part of nature, needing to take care of both ourselves and our home—and that this can start at any level of society.



**BUSINESS CANVAS: FUNDACIÓN BASURA**

<b>ORGANISATION</b>	Fundación Basura	<b>ORGANISATION TYPE</b>	Non-profit organisation	
<b>Key partners</b>	<ul style="list-style-type: none"> <li>Government</li> <li>Zero-waste alliance</li> <li>Private sector</li> <li>Universities (infrastructure, support, and access to student volunteers)</li> </ul>	<b>Value proposition</b>	<b>Waste output</b>	<b>Customers served</b>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Social network (social media and website)</li> <li>Online platform (UDEMY)</li> </ul>	<p><b>Aim:</b> Generate opportunities to connect and share zero-waste culture through an integral and flexible vision</p> <p><b>Value proposition:</b> Provide a holistic point of view while comprehensively addressing waste via prevention, product longevity, and sustainable end-of life management</p>	<ul style="list-style-type: none"> <li>Some recyclables</li> <li>Organics to compost (from events)</li> </ul>	<ul style="list-style-type: none"> <li>Event organisers: event guidance and waste services</li> <li>Government decision makers: legislation advice</li> <li>Private sector: zero-waste certification scheme</li> <li>Community: environmental training and social activities</li> </ul>
<b>Key legislation</b>	<ul style="list-style-type: none"> <li>REP: Extended user responsibility law of Chile</li> </ul>			
<b>Cost structure</b>	<ul style="list-style-type: none"> <li>Staff salaries</li> <li>Administrative costs</li> <li>Event operational costs (logistics, staff, food for workers and volunteers)</li> <li>Materials (training and green point materials, merchandising)</li> </ul>			
<b>Revenue structure</b>	<ul style="list-style-type: none"> <li>Donations – government (zero waste academies), private sector, individual</li> <li>Zero-waste product sales</li> <li>Zero-waste challenge event fees (based on event length and expected attendance)</li> </ul>			



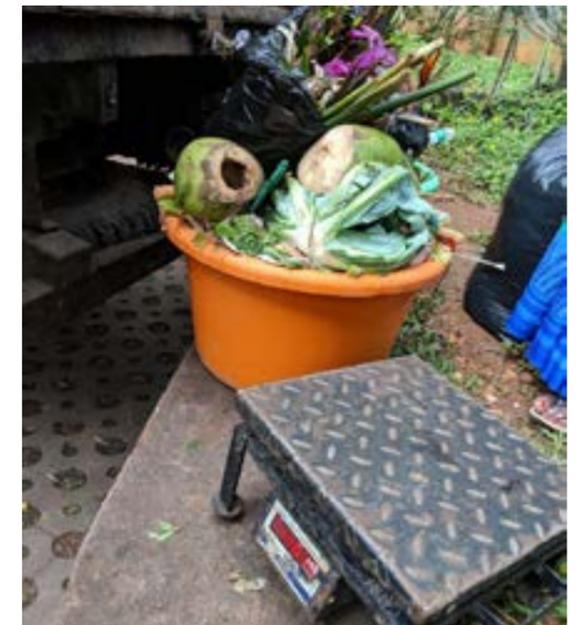
## HASIRUDALA INNOVATIONS

**Hasiru Dala Innovations (HDI)**—meaning Green (Hasira) Force/Army (Dala)—is a for-benefit, not-for-loss company based in Bangalore, India. It is a partner of NGO **HasiruDala**, which focuses on social justice and policy advocacy for waste pickers. They aim to create better livelihoods for waste pickers by enabling them to build viable businesses that have a positive social and environmental impact. They've inspired 28,000 households to sort their waste, resulting in 90 percent being recycled or processed (and thereby diverting more than 700 tons per month from landfill), while providing employment for nearly 200 waste pickers.

In Bangalore, legislation requires municipalities to provide collection services for single households—but leaves the market open for bulk waste generators (i.e., residential complexes with more than 50 households or commercial establishments generating more than 50 kilograms of organic waste per day). For these, HDI waste picker entrepreneurs provide total waste management services.

### QUICK FACTS

**Name:** Hasiru Dala Innovations  
**Location:** Bangalore, India  
**Organisation type:** Section 8 company  
**Founded:** 2016  
**Operation:** Collection, event waste management  
**Quantity handled:** 800 tons/month  
**Households served:** 30,000  
**Website:** <https://hasirudalainnovations.com/>



Entrepreneur waste pickers are trained on service delivery and given a unique collection route and truck (which they gain full ownership of after four years). They then recruit a driver, two collection workers, and sorters in order to build their own waste business. Collection workers gather organics daily and non-organics once per week, selling recyclables to wholesalers and delivering organic waste to composters. They earn money from their recyclable sales and a collection service fee from each household.

This model empowers waste pickers to become entrepreneurs who can in turn gainfully employ other waste pickers and gain assets for themselves (e.g., coming to own a collection truck). They also develop stable earnings and enjoy safer working conditions.

**BUSINESS CANVAS: HASIRU DALA INNOVATION**

<b>ORGANISATION</b>	HasiruDala	<b>ORGANISATION TYPE</b>	Section 8 for-benefit, not-for-loss company	
<b>Key partners</b>	<b>Key activities</b>	<b>Value proposition</b>	<b>Waste output</b>	<b>Customers served</b>
<ul style="list-style-type: none"> <li>Hasiru Dala NGO</li> <li>Waste pickers</li> </ul>	<ul style="list-style-type: none"> <li>Sign-up bulk waste service customers (B2B) and manage contractual relationships</li> <li>Recruit entrepreneurial waste pickers and train them for service delivery, KPIs, etc.</li> <li>Give each entrepreneurial waste picker a collection route, a truck, and a standardised process for service delivery</li> <li>Provide quality control (one HDI supervisor supports three truck routes every day with customer care helpline and issue log system)</li> <li>Waste management services, including 80 events a year (employing 250 waste pickers)</li> <li>Managing aggregation facility</li> </ul>	<p><b>Aim:</b> Create better livelihoods for waste pickers through viable businesses that provide positive social and environmental impact</p> <p><b>Value proposition:</b> Offer households and businesses reliable, full waste collection services by empowering waste pickers to become entrepreneurs</p>	<ul style="list-style-type: none"> <li>Handled by waste picker entrepreneurs</li> </ul>	<ul style="list-style-type: none"> <li>Bulk service clients: encompassing 30,000 households and 120 commercial businesses</li> <li>Waste picker entrepreneurs: including 184 waste picker jobs</li> </ul>
<b>Key Resources</b>			<b>Impact</b>	
<ul style="list-style-type: none"> <li>Hasiru Dala legacy</li> </ul>			<ul style="list-style-type: none"> <li>Waste is diverted from landfill</li> <li>Waste managed responsibly (800 tons/month) Achieved over 90% source separation</li> <li>Materially changed the lives of waste pickers with sustainable livelihoods, confidence, and marketable skills</li> </ul>	
<b>Key legislation</b>				
<ul style="list-style-type: none"> <li>BBMP: regulation ensuring bulk waste services would not be provided by municipalities, opening up 40% of Bangalore's waste to private collection services</li> </ul>				
<b>Cost structure</b>	<b>Revenue structure</b>			
<ul style="list-style-type: none"> <li>Staff salaries</li> <li>Truck purchases for entrepreneurs</li> <li>Landfill tipping fee</li> <li>Customer service</li> <li>Safety gear</li> <li>Wet waste transfer</li> </ul>	<ul style="list-style-type: none"> <li>Collection service fees (fixed fee per household/month), variable fee per kilogram of wet waste and residual waste (dry waste is free)</li> <li>Waste event management fees</li> <li>Aggregation facility recyclable sales</li> </ul>			

**BUSINESS CANVAS: HASIRU DALA INNOVATION (WASTE PICKER ENTREPRENEURIAL MODEL EMBEDDED IN COMPANY MODEL)**

<b>ORGANISATION</b>	Hasiru Dala Innovation	<b>ORGANISATION TYPE</b>	Section 8 for-benefit, not-for-loss company	
<b>Key partners</b>	<b>Key activities</b>	<b>Value proposition</b>	<b>Waste output</b>	<b>Customers served</b>
<ul style="list-style-type: none"> <li>HasiruDala Innovations (HDI)</li> </ul>	<ul style="list-style-type: none"> <li>Recruit entrepreneurs and workers (driver, collection workers, sorters)</li> <li>Train clients on how to separate waste</li> <li>Collect household waste</li> <li>Sort non-organic waste and sell to wholesalers</li> <li>Deliver organic waste to composter</li> <li>Deliver residual waste to landfill</li> </ul>	<p><b>Aim:</b> Create better livelihoods for waste pickers through viable businesses that provide a positive social and environmental impact</p> <p><b>Value proposition:</b> Offer households and businesses reliable, full waste collection services by empowering waste pickers to become waste system entrepreneurs</p>	<ul style="list-style-type: none"> <li>Recyclables</li> <li>Compost</li> </ul>	<ul style="list-style-type: none"> <li>Households and businesses</li> </ul>
<b>Key Resources</b>			<b>Impact</b>	
<ul style="list-style-type: none"> <li>Collection trucks</li> <li>Sorting stations</li> <li>Assigned routes</li> <li>Household relationships</li> </ul>			<ul style="list-style-type: none"> <li>Supported 184 waste pickers to be gainfully employed</li> </ul>	
<b>Key legislation</b>				
<p>BBMP: regulation ensuring bulk waste services would not be provide by municipalities, opening up 40% of Bangalore's waste to private collection services</p>				
<b>Cost structure</b>	<b>Revenue structure</b>			
<ul style="list-style-type: none"> <li>Staff salaries (driver, collection workers, sorters)</li> <li>Truck maintenance and fuel</li> <li>Vehicle rent</li> </ul>	<ul style="list-style-type: none"> <li>Recyclable sales</li> <li>Franchise fee per household served</li> </ul>			



## MUNICIPALITY OF LA PINTANA

The **municipality of La Pintana**, part of Santiago, Chile, prides itself on the proper management of its waste. This begins with source separation and collection. To process the 56% of its waste that is organic, they implemented a compost system. This was first inspired by budgetary pressures, then made possible by strong municipal leadership after a deficit developed in the waste disposal budget. Realising that a composting program would not only better utilise organic waste but also save up to 50 percent of the municipality's waste disposal budget, they started the **DIGA initiative**. Organics are selectively collected from residents and transformed into useable compost and fertiliser. To garner support, an environmental education team goes door-to-door speaking to residents an average of four times each.

Residents can register for the service free of charge. They are then given a compost bin, collection bags, and taught how to properly separate organics. The municipality uses trucks painted with the slogan, "If you don't want the world to stop ... ¡Stop and Sort!" The trucks collect three times a week. At a processing site



### QUICK FACTS

- Name:** Municipality of La Pintana
- Organization type:** Municipality
- Location:** Santiago, Chile
- Founded:** 2005
- Operation:** Collection, composting
- Materials:** Organic
- Quantity handled:** 15 tons/day
- Households served:** 10,000
- Website:** <http://www.pintana.cl/>

material undergoes either windrow (to produce compost) or a trench method with vermiculture (to produce hummus fertiliser). The final products are considered property of the community itself and are available for free to any residents. The compost is also used as part of the municipality's nursery program, which plants 150 trees a month. Currently, the municipality is processing up to 15 tons of organics per day, allowing it to produce compost and fertiliser at a rate of approximately 4 tons per month.

La Pintana also started a reading program, with a travelling library called Ecolubi focused on environmental education. Adults are engaged through a community-learning program focused on courses in composting, gardening, and medicinal herbs that enhance appreciation for working with organic materials. The program has also experimented with collecting used cooking oil and converting it into biofuel, which then powers the waste collection trucks and a wood chipper used in the composting process. Mushrooms are also being produced as part of the program.



## BUSINESS CANVAS: MUNICIPALITY OF LA PINTANA

<b>ORGANISATION</b>	Municipality of La Pintana	<b>ORGANISATION TYPE</b>	Municipality						
<b>Key partners</b>	<ul style="list-style-type: none"> <li>• Government</li> <li>• Community of La Pintana</li> </ul>	<b>Key activities</b>	<ul style="list-style-type: none"> <li>• Educate households on how to properly clean and separate materials</li> <li>• Collect pre-sorted organics from households</li> <li>• Perform windrow processing of organics into compost</li> <li>• Perform vermiculture processing to capture excess organics (to keep out of landfill) and produce fertiliser</li> </ul>	<b>Value proposition</b>	<p><b>Aim:</b> Selectively collect organic waste from residents and transform it into a useable compost and fertiliser</p> <p><b>Value proposition:</b> Offer free service and bring benefits to the community by providing an alternative to organic waste management going to landfill</p>	<b>Waste output</b>	<ul style="list-style-type: none"> <li>• Compost (windrow, vermiculture)</li> <li>• Fertiliser</li> <li>• Plant nursery</li> </ul>	<b>Customers served</b>	<ul style="list-style-type: none"> <li>• Households: 10,000 provided with sustainable outlet for organic waste and access to free compost</li> <li>• Other community programs provided with compost to use for planting, etc.</li> </ul>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>• Land</li> <li>• Trucks</li> </ul>			<b>Impact</b>	<ul style="list-style-type: none"> <li>• Processing up to 35 tons of organics per day</li> <li>• Production of compost and fertiliser of 4 tons/month</li> <li>• Compost that is part of 150 trees being planted per month</li> </ul>				
<b>Key legislation</b>	La Comisión Nacional del Medio Ambiente (CONAMA): former state agency that granted original permission to operate plant								
<b>Cost structure</b>			<b>Revenue structure</b>						
<ul style="list-style-type: none"> <li>• Staff salaries</li> <li>• Facility/land rent</li> <li>• Vehicle cost (maintenance, fuel)</li> <li>• Operational costs</li> <li>• Administrative fees</li> </ul>			<ul style="list-style-type: none"> <li>• Municipal funding</li> <li>• Credit with other municipal departments, i.e. compost or nursery plants</li> </ul>						



## MUNICIPALITY OF PEÑALOLÉN

More than 400 waste pickers reside in the municipality of Peñalolén. To protect their livelihoods, the municipality started **Reciclaje Inclusivo Comunal**, which formally integrates waste pickers into the city's waste collection services. The program aims to dignify and professionalise their work with training, workshops, certification, awareness, and regular environmental education for both the general populace and waste pickers. The program is in the social entrepreneurship sphere of sustainable development, incorporating environmental, social, and economic issues.

Backed by strong support from government and industry, as well as the impact of Chile's 2016 Law 20,920 (which stipulated a five-year goal for the economic role of waste pickers to be formalised), currently, 30 door-to-door waste pickers collect recyclable materials on predetermined routes. Workers are guaranteed fair payment (ranging from 1.3 to 2.5 times the minimum wage). Materials collected include white paper, newspaper, cardboard, magazines, PET 1, plastic bottles, and aluminium cans. When markets develop, the program plans to add other types of materials in the future.

Materials are taken to one of six stations where they are sorted, compacted, and sold. Each sorting station was financed by private companies, while operating expenses are covered by the municipality. Currently around 6,000 households are served and approximately 40 to 50 tons of material is sold a month. Some of the key adjustments over the course of the project include recyclers being given clearly assigned routes, formal agreements with households served, individual feedback, and increasing autonomy.

### QUICK FACTS

**Name:** Municipality of Peñalolén  
**Location:** Santiago, Chile  
**Organisation type:** Municipality  
**Founded:** 2010  
**Operation:** Collection, sortation  
**Quantity handled:** 40–50 tons/month  
**Households served:** 6,000  
**Website:** <https://www.penalolen.cl/medio-ambiente/centro-de-reciclaje-en-penalolen/>



The program plans to build a larger recycling centre in Peñalolén. It is expected to deliver recycling services to more than 15,000 homes, increase the number of waste pickers employed from 30 to 100, and further diversify materials collected. A business management model will make the program a pioneer in formalising the role of recyclers and collection systems with regards to Law 20,920 (Extended Producer Responsibility).

**BUSINESS CANVAS: MUNICIPALITY OF PEÑALOLÉN**  
(1 OF 2: MUNICIPALITY MODEL)

<b>ORGANISATION</b>	Municipality of Peñalolén	<b>ORGANISATION TYPE</b>	Government municipality run program	
<b>Key partners</b>	<b>Key activities</b>	<b>Value proposition</b>	<b>Waste output</b>	<b>Customers served</b>
<ul style="list-style-type: none"> <li>Partner companies (Coca Cola Foundation, Fundación Casa de la Paz)</li> <li>Waste pickers</li> </ul>	<ul style="list-style-type: none"> <li>Sign-up households for recyclable waste services</li> <li>Recruit entrepreneurial waste pickers to join the program</li> <li>Assign routes based on equipment at each waste picker's disposal</li> <li>Introduce waste pickers to households, establishing mutual relationship and commitment</li> <li>Provide clean points (from sponsoring companies) for sortation and aggregation</li> <li>Provide quality control with random surveys of households and providing individual feedback to each waste picker</li> <li>Train waste pickers</li> </ul>	<p><b>Aim:</b> Dignify and professionalise work of waste pickers</p> <p><b>Value proposition:</b> Offer households reliable recyclable waste collection by empowering waste pickers to become waste system entrepreneurs</p> <p><b>Value proposition to waste pickers:</b> Offer stable, safe entrepreneurial opportunity</p>	<ul style="list-style-type: none"> <li>Handled by waste picker entrepreneurs</li> </ul>	<ul style="list-style-type: none"> <li>Households (6,000, mostly condominiums) provided with reliable door-to-door recyclable waste service</li> <li>Reliable income for 30 waste pickers</li> </ul>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Municipality routes</li> </ul>		<b>Impact</b>	
<b>Key legislation</b>	<ul style="list-style-type: none"> <li>Law 20,920 of Chile of 2016 (REP: Framework Law for Waste Management, Extended Producer Responsibility, and Recycling Promotion): Stipulates five-year period for waste pickers to be formalised</li> </ul>		<ul style="list-style-type: none"> <li>Entrepreneurial opportunity provided to 30 waste pickers</li> </ul>	
<b>Cost structure</b>	<b>Revenue structure</b>			
<ul style="list-style-type: none"> <li>Staff salaries</li> <li>Sorting station (rent, electricity, materials, compactor, etc.)</li> <li>Administration fees</li> <li>Door-to-door training of communitys</li> </ul>	<ul style="list-style-type: none"> <li>Collection service fees (fixed model based on collections per month)</li> <li>Municipal support</li> <li>Industry partners (who provide capital investment for sorting stations)</li> </ul>			

**BUSINESS CANVAS: MUNICIPALITY OF PEÑALOLÉN (2 OF 2: WASTE PICKER ENTREPRENEURIAL MODEL EMBEDDED IN MUNICIPALITY MODEL)**

<b>ORGANISATION</b>	Municipality of Peñalolén	<b>ORGANISATION TYPE</b>	Government municipality run program	
<b>Key partners</b>	<b>Key activities</b>	<b>Value proposition</b>	<b>Waste output</b>	<b>Customers served</b>
<ul style="list-style-type: none"> <li>Municipality</li> </ul>	<ul style="list-style-type: none"> <li>Collect specific categories of household recyclable waste (white paper, newspaper, cardboard, magazines, PET 1, plastic bottles, and aluminium cans)</li> <li>Aggregate materials at assigned sorting stations</li> <li>Sort and bail material</li> <li>Sell material to chosen buyers at market price</li> </ul>	<p><b>Aim:</b> Dignify and professionalise work of waste pickers</p> <p><b>Value proposition:</b> Offer stable, safe entrepreneurial opportunities</p>	<ul style="list-style-type: none"> <li>Baled recyclable materials</li> </ul>	<ul style="list-style-type: none"> <li>Households provided with recyclable material service</li> <li>Municipality landfill burden lessened</li> <li>condominiums) provided with reliable door-to-door recyclable waste service</li> <li>Reliable income for 30 waste pickers</li> </ul>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Collection equipment</li> <li>Sorting stations</li> <li>Assigned routes</li> <li>Household relationships</li> </ul>		<b>Impact</b>	
<b>Key legislation</b>	<ul style="list-style-type: none"> <li>Law 20,920 of Chile of 2016 (REP: Framework Law for Waste Management, Extended Producer Responsibility, and Recycling Promotion): Stipulates five year-period for waste pickers to be formalised</li> </ul>		<ul style="list-style-type: none"> <li>Entrepreneurial opportunity provided to 30 waste pickers</li> </ul>	
<b>Cost structure</b>	<b>Revenue structure</b>			
<ul style="list-style-type: none"> <li>Collection vehicles (capital and operating costs)</li> </ul>	<ul style="list-style-type: none"> <li>Recyclable sales</li> </ul>			



### QUICK FACTS

**Name:** Pimp My Carroça

**Organization type:** Non-governmental (NGO)

**Location:** São Paulo, Brazil

**Founded:** 2012

**Operation:** Art, education, public intervention

**Website:** <http://pimpmycarroca.com/>

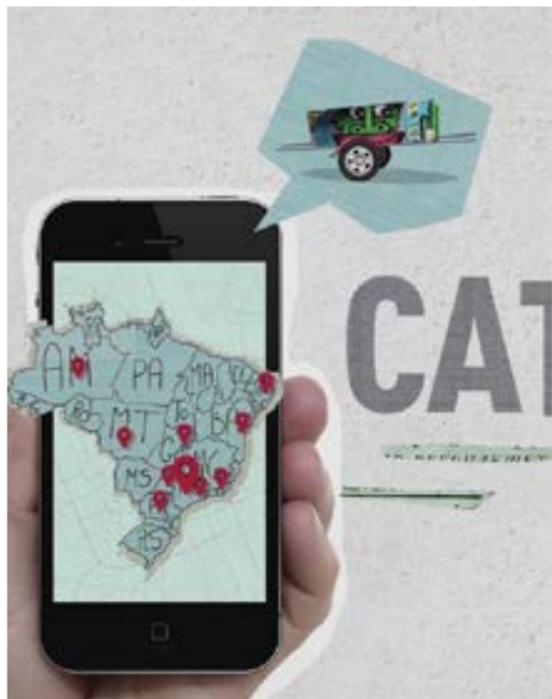
### PIMP MY CARROÇA

**Pimp My Carroça** is a non-governmental organization (NGO) whose mission is to bring visibility to the street-level waste pickers by engaging society at large. The initiative was created by Brazilian graffiti artist Mundano, who while engaging in social and environmental causes realised that art could be a path of social inclusion.

His interactions with waste pickers culminated in the creation of Pimp My Carroça—a day of public intervention at a central point of the city (to ensure waste pickers with different schedules could attend). The focus was to promote the welfare and health of waste pickers by bringing doctors, ophthalmologists, psychologists, and masseurs to them—in addition to repairing and painting carts. Carried out by volunteers, the Pimpex methodology is available on their website, which outlines eight basic steps that those who want to help waste pickers can follow, including with equipment, repairs, and painting carts.

The initiative won hearts and minds in cities in Brazil. In addition to performing interventions in public spaces, Pimp My Carroça now holds events at cooperatives and collection points. It offers companies and those interested the opportunity to experience the work and lives of waste pickers.

Cataki is an app developed by Pimp My Carroça that allows citizens to schedule collection from a street waste picker. Pimp My Carroça is funded by businesses and foundations (for example, OAK Foundation sponsored the development of the Cataki app).





**QUICK FACTS**

**Name:** Plastics for Change

**Organisation type:** For-profit social enterprise

**Location:** Bangalore, India

**Formed:** 2015

**Operations:** Recycled plastic feedstock, App platform

**Website:** <http://www.plasticsforchange.org/>



Responsibility legislation, which requires companies to prove they collect the same amount of waste they sell into the market. By hedging prices in advance, the program stabilises material costs for brands while lowering the risk of price fluctuations, giving aggregators and recyclers the surety they need to accumulate plastic in bulk. This creates more stable livelihoods for waste pickers.

Using an IT-enabled, ethical-sourcing platform and a skilled team, Plastic for Change builds a traceable, Fairtrade supply chain. Waste pickers use the platform to compare junk shop pricing and receive immediate payment through the app, ensuring fair prices and quick payment. Materials sold are also given a unique ID. Buyers then aggregate like materials and sell through the app to wholesalers, also receiving near real-time payment. Wholesalers and recyclers then process materials in batches to keep tracking integrity, getting priority access to premium pricing only if they comply with a social, environmental, and transparency code of conduct (as well as certain quality production standards meeting buyer requirements).

**PLASTICS FOR CHANGE**

Plastics for Change has a mission to change the social and environmental impact of plastic. Their high-touch, high-tech model materially increases brand demand for recycled plastic. It also improves recycler transparency and environmental and social practices by providing access to working capital to recyclers and guaranteeing fair, stable wages for waste workers.

Fewer than 5 percent of Indian manufacturers source recycled plastic. Plastics for Change aims to make it profitable and easy for companies to transition away from virgin plastic and begin sourcing recycled material. To this end, they provide training to companies on how to work with recycled plastic materials effectively and help them meet the quality specifications needed for their production process.

After negotiating long-term contracts at a price premium for fully traceable, Fairtrade plastic feedstock, brands gain access to a consistent supply of high-quality recycled material. This enables them to improve recycling rates and meet or exceed India's new Extended Producer



**BUSINESS CANVAS: PLASTICS FOR CHANGE**

<b>ORGANISATION</b>	Plastics for Change	<b>ORGANISATION TYPE</b>	For-profit entity registered in Canada with a subsidiary in India		
<b>Key partners</b>	<ul style="list-style-type: none"> <li>Small Scale Infrastructure Development Fund (S3IDF)</li> <li>Non-profit Hasira Dala</li> <li>Recycling stakeholders (waste pickers, aggregators, wholesalers, recyclers)</li> </ul>	<b>Key activities</b>	<b>Value proposition</b>	<b>Waste output</b>	<b>Customers served</b>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Ethical-sourcing platform</li> <li>Brand relationships</li> <li>NGO and recycling industry relationships</li> </ul>	<ul style="list-style-type: none"> <li>Train companies on how to work with recycled materials</li> <li>Negotiate long-term contracts with companies at a price premium for ethically-sourced, traceable, Fairtrade, recycled plastic</li> <li>Develop an ethical-sourcing platform that brings transparent, fair pricing and near real-time payment to each part of the recycling value chain</li> <li>Build traceable supply chains and improve processing efficiency of aggregators, wholesalers, and recyclers</li> <li>Negotiate with wholesalers and recyclers to comply with a social, environmental, and transparency code of conduct and material-quality production standards</li> <li>Partner with S3IDF to support access to small-scale loans</li> </ul>	<p><b>Aim:</b> Change the social and environmental impact of plastic, including fighting climate change, creating livelihoods, and reducing plastic pollution</p> <p><b>Value proposition:</b> Use mobile technology to reduce plastic pollution and create resilient livelihoods for the urban poor in developing countries</p> <p><b>Value proposition to companies:</b> Make profitable the transition from virgin plastic to recycled plastic</p>	<ul style="list-style-type: none"> <li>Ethically-sourced, recycled plastic feedstock that meets manufacturer quality requirements</li> </ul>	<ul style="list-style-type: none"> <li>Consumer packaged goods companies and manufacturers</li> <li>Waste pickers, recycling aggregators, wholesalers, and recyclers</li> <li>NGO partners</li> </ul>
<b>Key legislation</b>	<ul style="list-style-type: none"> <li>India's EPR legislation: Makes business licences subject to the requirement that waste sold into a market is fully recovered</li> </ul>			<b>Impact</b>	
				<ul style="list-style-type: none"> <li>Create sustainable livelihoods for urban poor</li> <li>Shift companies from virgin to recycled plastics (reducing CO2)</li> <li>Accelerate development of recycling infrastructure</li> <li>Prevent unmanaged disposal of plastic</li> </ul>	
<b>Cost structure</b>	<ul style="list-style-type: none"> <li>Staff salaries</li> <li>Administrative costs</li> <li>Platform development</li> </ul>		<b>Revenue structure</b>		
			<ul style="list-style-type: none"> <li>Management fee on app platform</li> <li>Management fee on buyer contracts</li> <li>Selling a consistent supply of high quality recycled plastic</li> </ul>		



## PROJECT STOP

Borealis and SYSTEMIQ joined forces to start **Project STOP**, which partners with cities and government to create effective waste management systems. The goal is to collect waste from every household and business in order to eliminate leakage of plastics into the ocean. STOP builds circular systems where the majority of waste, even that which is hard to recycle, is recycled or processed into new products. The resulting created value lowers the financial burden of the waste system on the city and its residents.

Primary objectives of Project STOP include: zero leakage of waste into the environment; increased recycling and valorisation of waste; socio-economic benefits to the local community; and scaling by communicating frontline insights to inform policy, product designs, and support others working on ocean plastic and waste management issues.

Project STOP uses a “system enabler” approach. A team of experts in waste management, recycling, business development, and behaviour change—financed by the private sector and the

### QUICK FACTS

**Name:** Project STOP

**Locations:** Muncar, Pasuruan, Jembrana, Indonesia

**Organisation type:** B-Corp (SYSTEMIQ)

**Founded:** 2017

**Operation:** Collection, sortation, baling, Organics processing (compost and black soldier fly)

**Households served:** 9,000 growing to 45,000

**Website:** <https://stopoceanplastics.com/>

Norway Ministry of Foreign Affairs—help sub-districts and villages design and implement integrated, low-cost waste management systems. Then sorted waste is collected from every household and business, transported to a waste-sorting facility, and as much value is captured as possible (with residual waste disposed of safely). Existing local initiatives (and informal waste collectors) are supported and integrated into the new waste system. All profits from the sale of recyclables and processing of organics are kept by the local community, used to support worker salaries and other system operating costs.

The team is embedded with local governments for the long-term, providing sustained implementation support across every facet of the waste system until a new one is institutionalised across an entire city. They also provide catalytic funding for the purchase of collection and processing equipment, community behaviour change campaigns, clean-ups, and transitional operating costs.

Today they are working in Muncar—a fishing village in Eastern Java—with plans to scale into two additional cities and an entire region in 2019.



**BUSINESS CANVAS: PROJECT STOP (1 OF 2: SYSTEM ENABLER MODEL)**

<b>ORGANISATION</b>	Project STOP	<b>ORGANISATION TYPE</b>	B-corp (SYSTEMIQ project)	
<b>Key partners</b>	<b>Key activities</b>	<b>Value proposition</b>	<b>Waste output</b>	<b>Customers served</b>
<ul style="list-style-type: none"> <li>Borealis (co-founder)</li> <li>Indonesia Ministry of Environment and Forestry</li> <li>Technical partners Veolia and Sustainable Waste Indonesia (SWI)</li> <li>PKK Women's groups</li> <li>Fishermen</li> <li>Strategic Partners Norway Ministry of Foreign Affairs, NOVA Chemicals, Nestle, Alliance to End Plastic Waste, Borouge</li> </ul>	<ul style="list-style-type: none"> <li>Perform city assessments, including waste characterisation study, ocean leakage assessment, and socio-economic surveys</li> <li>Provide expert waste management and recycling advice</li> <li>Skills transfer</li> <li>Prepare and implement city waste management project plan, including design of transfer station, waste collection system, behaviour change campaign, and beach clean-ups</li> <li>Build municipal governance and financial transparency</li> <li>Provide funding for waste processing assets, household behaviour change campaigns, and clean-ups</li> <li>Find markets for waste output, including normally hard to recycle plastics</li> <li>Inter-village regulations</li> </ul>	<p><b>Aim:</b> On-the-ground, tangible solutions to ocean plastics in Southeast Asia</p> <p><b>Value proposition:</b> Permanent, measurable ocean plastic reduction in highest leakage cities</p> <p><b>Value proposition to cities:</b> Funding and expert support to help meet a city's waste management targets</p>	<ul style="list-style-type: none"> <li>N/A: waste output produced by village business (BUMDES)</li> </ul> <p><b>Impact</b></p> <ul style="list-style-type: none"> <li>Empower local government to build low-cost waste system that is economically sustainable</li> <li>Valorise organics using black soldier fly</li> <li>Found markets for normally non-recyclable plastics</li> <li>Socio-economic benefits for communities supported</li> </ul>	<ul style="list-style-type: none"> <li>National government: Ministry of Environment and Forestry, Coordinating Ministry of Maritime Affairs</li> <li>Provincial/Regency government: Banyuwangi Mayor</li> <li>Local government: Camat, Village heads, BUMDES leaders</li> <li>Private sector: Resin producers and consumer packaged goods companies</li> </ul>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Team of experts</li> <li>Relationships with resin producers and consumer packaged goods companies</li> </ul>			
<b>Key legislation</b>	<ul style="list-style-type: none"> <li>Internal Affairs Minister Regulation 33, 2012: required villages to be responsible for waste collection</li> </ul>			
<b>Cost structure</b>	<b>Revenue structure</b>			
<ul style="list-style-type: none"> <li>Staff salaries</li> <li>Office (rent, utilities)</li> <li>Travel</li> <li>Expert consultant fees</li> </ul>	<ul style="list-style-type: none"> <li>Program funding from development finance and the private sector, especially resin producers and consumer packaged goods companies</li> </ul>			

**BUSINESS CANVAS: PROJECT STOP (2 OF 2: VILLAGE BUMDES MODEL EMBEDDED IN PROJECT STOP MODEL)**

<b>ORGANISATION</b>	Project STOP	<b>ORGANISATION TYPE</b>	Village business (BUMDES)	
<b>Key partners</b>	<b>Key activities</b>	<b>Value proposition</b>	<b>Waste output</b>	<b>Customers served</b>
<ul style="list-style-type: none"> <li>Project STOP</li> <li>Environmental Agency (DLH)</li> </ul>	<ul style="list-style-type: none"> <li>Door-to-door household and business collection</li> <li>Recyclable sortation and baling</li> <li>Black soldier fly and compost processing</li> <li>Waste bank (in development)</li> </ul>	<p><b>Aim:</b> Build a clean, healthy Muncar</p> <p><b>Value proposition:</b> Provide regular, inexpensive waste collection services to the community and minimise the amount of waste going to landfill</p>	<ul style="list-style-type: none"> <li>Recyclables</li> <li>Black soldier fly larvae</li> <li>Compost</li> </ul> <p><b>Impact</b></p> <ul style="list-style-type: none"> <li>Providing waste collection to 30,000 people, most for the 1st time</li> <li>Cleaned 5000m2 beach surface</li> <li>Created 60 full time jobs</li> </ul>	<ul style="list-style-type: none"> <li>Households and businesses</li> </ul>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Collection vehicles (trucks, tricycles)</li> <li>Conveyor belt</li> <li>Baler</li> <li>TPST facility</li> </ul>			
<b>Key legislation</b>	<ul style="list-style-type: none"> <li>Internal Affairs Minister Regulation No. 33, 2012: required villages to be responsible for household waste collection</li> <li>Law No. 32, 2004: about Local Government including BUMDES regulation</li> </ul>			
<b>Cost structure</b>	<b>Revenue structure</b>			
<ul style="list-style-type: none"> <li>Staff salaries (driver, collection workers, sorters)</li> <li>Facility operational costs (electricity, materials, compactor, etc.)</li> <li>Vehicle costs (maintenance, fuel, etc.)</li> <li>Administrative costs</li> <li>Black soldier fly materials</li> </ul>	<p>Waste valorisation</p> <ul style="list-style-type: none"> <li>Recyclable sales</li> <li>Black soldier fly larvae sales to fish and chicken farmers</li> <li>Organic compost for agriculture and government facilities (minimal)</li> </ul> <p>Collection fees</p> <ul style="list-style-type: none"> <li>Households collection services</li> <li>Business collection services</li> </ul> <p>Government funding</p> <ul style="list-style-type: none"> <li>Environmental Agency</li> <li>Village funds</li> </ul>			



**QUICK FACTS**

**Name:** Projeto Relix  
**Organisation type:** Company (sponsored by Sesi)  
**Location:** Pernambuco, Brazil  
**Formed:** 2011  
**Operation:** Environmental education and behaviour change  
**Community directly reached:** Over 100,000  
**Website:** <https://www.facebook.com/projetorelix/>



**PROJETO RELIX**

Projeto Relix started as an environmental education project formed by the company Agência de Comunicação e Cultura. When Brazil enacted the National Policy of Solid Waste in 2010, local governments were called upon to take action. The state of Pernambuco—and more specifically the city of Recife—took this responsibility very seriously. The principal aim of Projeto Relix was to promote environmental education and communication, especially with regards to minimising the negative stigma of waste pickers and seeking solutions for handling the waste stream.

Theatre has been an integral part of Relix' activities since its inception. Performances are customised to audiences and are offered free to the public (with typical attendance of 200). These focus on the importance of recycling while keeping waste pickers as central characters to promote community acceptance of their work.

The program also donates specially designed bikes and equipment to waste pickers, who are usually featured in expositions that promote the

acceptance of waste pickers into society.

Finally, a wide range of educational and general reading materials (such as comic books) are available for use in schools and by other educational organizations. These promote environmental education as part of the ordinary curriculum, reinforcing recycling as an everyday habit.

Since its inception—currently in its fourth version—the project has developed success metrics and is committed to feedback. Current efforts include speaking directly with waste pickers about their “before and after picture” of recycling and their level of community acceptance. To date there have been over 600 performances in 3 different Brazilian states, over 3,000 students and adults receiving environmental education, 3 expositions, and 73,000 copies of materials (including 35,000 comic books) distributed.



**BUSINESS CANVAS: PROJETO RELIX**

<b>ORGANISATION</b>	Projeto Relix	<b>ORGANISATION TYPE</b>	Company (but the Project Relix is financed by Sesi)						
<b>Key partners</b>	<ul style="list-style-type: none"> <li>Municipality of Recife</li> <li>Social Service of Industry (SESI)</li> <li>Schools</li> <li>Waste picker cooperatives</li> </ul>	<b>Key activities</b>	<ul style="list-style-type: none"> <li>Perform free theatrical productions based on local culture that promote environmentally sustainable actions and waste picker inclusion, including in schools</li> <li>Promote communication with waste pickers</li> <li>Donate ergonomically designed bicycles to waste pickers</li> <li>Photograph waste pickers to promote and dignify their work, creating booklets and public expositions</li> <li>Produce and sell educational materials (comic books, scholastic curriculum materials)</li> </ul>	<b>Value proposition</b>	<p><b>Aim:</b> Promote environmental education and seek solutions to improve the conditions of waste pickers</p> <p><b>Value proposition:</b> Provide education in communities to promote environmentally sustainable behaviours and inclusion of the waste picker community</p>	<b>Waste output</b>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<b>Customers served</b>	<ul style="list-style-type: none"> <li>Government</li> <li>Community</li> <li>Schools</li> <li>Waste pickers</li> </ul>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Communication outlets (web, publications, videos, books)</li> <li>Bicycles to waste pickers</li> <li>Theatre scripts</li> </ul>	<b>Key legislation</b>	<ul style="list-style-type: none"> <li>National Law Of Solid Waste, 12.305\10</li> </ul>			<b>Impact</b>	<ul style="list-style-type: none"> <li>Improved social standing of waste pickers</li> <li>Over 600 performances</li> <li>Over 73,000 copies of material distributed, including 35,000 comic books</li> </ul>		
<b>Cost structure</b>		<b>Revenue structure</b>							
<ul style="list-style-type: none"> <li>Staff salaries</li> <li>Cost of donated bicycles</li> <li>Cost to produce theatrical events</li> <li>Cost to create and promote expositions</li> <li>Administrative costs</li> <li>Cost of publication/printing</li> </ul>		<ul style="list-style-type: none"> <li>Project fee from Sesi to implement the project (financed by Sesi, with the Aliança Comunicação Cultura having different projects in other sectors)</li> </ul>							



**QUICK FACTS**

**Name:** Rumah Kompos Padangtegal  
**Organisation type:** Village-led organisation  
**Location:** Padangtegal, Gianyar, Bali, Indonesia  
**Founded:** 2015  
**Operation:** Full waste stream collection (pre-sorted), composting  
**Quantity handled:** 15 tons/day  
**Households served:** 723 (100% of Padangtegal)  
**Website:** <https://www.facebook.com/rumahkompospad>



Bins are also placed every 60 meters along the tourist streets. These tools and training are supported by an awig-awig (cultural regulation) enacted in 2017 requiring Padangtegal households to separate their waste as part of Bali's Tri Hita Karana philosophy that promotes harmony between man, the environment, and God. This regulation also enables Padangtegal to not collect trash if it is not sorted.

Rumah Kompos collects waste nightly, keeping vehicles off the heavily trafficked, tourist-orientated Ubud streets during the day. Door-to-door collection with handcarts is synced with truck collection so that holding stations (depots) are not required. Trash is quickly sorted, with most organics delivered to Temesi (see Temesi organisational profile). A small portion is composted in Rumah Kompos's own Compost Learning Centre, which helps teach the importance of recycling.

Collection service fees are paid by the Monkey Forest tourist fund (about 4,500 visitors per day pay about US \$3.40 for entry). There is already an agreement with the Ministry of Public Works and Housing to construct a larger facility for processing waste.



**RUMAH KOM POS PADANGTEGAL**

Padangtegal is a village in Ubud, Gianyar, that is home one of Bali's most important tourist destinations, the Sacred Monkey Forest, with more than 500 monkeys and a number of important Hindu temples.

Unfortunately, the soil supporting the many large trees in the forest has been eroding. Monkey Forest managers realised they needed compost to address the issue, while also being concerned about waste dumping by many residents into local rivers. In large part because of these issues, **Rumah Kompos** was born in 2012.

It is now a community run, village-owned facility—led by Pak Supardi—collecting waste from every household and business within the village. According to Supardi, the goal is to make sure all waste from Padangtegal is managed so that little of it is transported to landfill and the Gianyar region is made clean and free of trash. Currently 67 percent of waste is being diverted from landfill.

Their unique approach of community organizing has inspired 90 percent of residents to separate their waste into organic and non-organic. Families are given multiple bins with the their name on it and taught how to properly separate.

**BUSINESS CANVAS: RUMAH KOMPOS PADANGTEGAL**

<b>ORGANISATION</b>	Rumah Kompos Padangtegal	<b>ORGANISATION TYPE</b>	Village organisation						
<b>Key partners</b>	<ul style="list-style-type: none"> <li>Gianyar Environmental Agency</li> <li>Government of Panitia Pembangunan Desa</li> <li>Bendesa (chief) of Padangtegal</li> <li>Ubud Monkey Forest</li> <li>JICA</li> </ul>	<b>Key activities</b>	<ul style="list-style-type: none"> <li>Behaviour change to teach source separation</li> <li>Daily organic and non-organic waste collection services</li> <li>Sorting of recyclable materials and subsequent sale</li> <li>Onsite composting at Compost Learning Centre</li> <li>Environmental education</li> </ul>	<b>Value proposition</b>	<p><b>Aim:</b> Padangtegal village is clean and minimal waste is transported to landfill</p> <p><b>Value proposition:</b> Provide a complete and responsible waste management system for residents and businesses of Padangtegal village in Ubud</p>	<b>Waste output</b>	<ul style="list-style-type: none"> <li>Recyclables</li> <li>Some compost using windrow method</li> </ul>	<b>Customers served</b>	<ul style="list-style-type: none"> <li>More than 700 households</li> <li>Private companies</li> <li>Sacred Monkey Forest temple tourist destination</li> </ul>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Loyal team</li> <li>Trucks</li> <li>Facility</li> </ul>	<b>Key legislation</b>	<ul style="list-style-type: none"> <li>Traditional awig-awig regulation honouring Tri Hita Kerana and requiring all residents to sort waste</li> </ul>	<b>Impact</b>		<ul style="list-style-type: none"> <li>About 70% of waste diverted from landfill</li> <li>Household sortation levels of 90% achieved</li> </ul>			
<b>Cost structure</b>		<b>Revenue structure</b>							
<ul style="list-style-type: none"> <li>Staff salaries (Rp85,000/day)</li> <li>Facility operational costs (electricity, maintenance)</li> <li>Vehicle costs (maintenance, fuel)</li> <li>Administration costs</li> </ul>		<ul style="list-style-type: none"> <li>Waste collection fee of Monkey Forest resident fund</li> <li>Collection fees from households and businesses</li> <li>Recyclable material sales</li> </ul>							



### QUICK FACTS

**Name:** Stree Mukti Sanghatana  
**Organisation type:** Cooperative  
**Location:** Mumbai, India  
**Founded:** 1975  
**Waste picker inclusion:** 5,000  
**Website:** [streemuktisanghatana.org](http://streemuktisanghatana.org)



of waste pickers (in the form of issuance of occupational identity cards by the municipality), support of children's education, formation of SHGs, health check-ups and access to medical facilities, providing training in alternative waste technologies (composting, bimethanation, gardening), and facilitating the formation of cooperatives for work opportunities.

SMS represents over 1,700 women who work on zero-waste efforts, biogas operations, gardening, composting, e-waste collection, waste audits, and running school-based and public-awareness programmes. It is affiliated with over 10 cooperatives.

## STREE MUKTI SANGHATANA

Stree Mukti Sanghatana (SMS) was founded in 1975 as a women's liberation organisation, focused on the social ills that plagued society. These include dowry, rape, women's illiteracy, and female feticide. In 1983, SMS launched the famous play *Mulagi Zali Ho* (A Girl is Born) that ran for more than 300 performances across Maharashtra. They then established a family counselling centre, the childcare centre *Aamche Ghar* (Our House), and an adult literacy campaign. In 1998 SMS launched their famed *Parisar Vikas* (Neighbourhood Development Programme).

Jyothi Mhapsekar, founder of SMS, voluntarily retired from being a librarian to devote herself to organizing over 5,000 waste pickers into self-help groups under the *Parisar Vikas* programme. In 2001, SMS organised a residential training program for 500 self-help groups (SHGs) of waste pickers, focused on leadership and vocational skills, and in 2003 partnered in construction of the first biogas plant with Greater Mumbai. A year later SMS founded the Federation of Self-Help Groups of Waste Pickers. It also launched education promotion programs for 500 children of waste pickers.

Current interventions include recognition



### QUICK FACTS

**Name:** SWaCH  
**Organisation type:** Workers cooperative  
**Location:** Pune and Pimpri Chinchwad, India  
**Founded:** 2008  
**Households served:** 643,000  
**Waste pickers inclusion:** SWaCH: 3,060; KKKPK: 9,000  
**Quantity handled:** 50,000 tons  
**Website:** [swachcoop.com](http://swachcoop.com)

## SWACH PUNE

The genesis of **SWaCH** can be traced to 1993. In Pune and Pimpri Chinchwad, the trade union of waste pickers and itinerant buyers *Kagad Kach Patra Kastakari* (KKPKP), was formed, its aim to assert their members' role in the city's solid waste management system. Lakshmi Narayanan, the founding member of KKKPKP (which has over 9000 members), says that the main goal was to become a successful, self-sustaining social enterprise protecting livelihoods and dignity through fair wages and paving the way for a sustainable solid waste management system throughout the region.

In 2000, when the government announced its Municipal Solid Waste Management and Handling Rules, KKKPKP launched a pilot program in collaboration with the Department of Adult Education, SNDT Women's University, and the local municipality. The aim was integrating waste pickers into the door-to-door collection of the city's waste, enabling 1,500 waste pickers to become service providers for hundreds of thousands of households. This paved the way for SWaCH—a wholly owned workers cooperative registered in 2008.

Presently SWaCH organises 3,060 waste pickers in providing door-to-door waste collection services to over 643,000 households. It has saved the municipality more than 510 million rupees (USD \$7 million) in labour, transportation, and processing expenses. The program has also helped waste pickers have access to sorting areas provided by the municipality.



In Pimpri and Chinchwad, SWaCH has a scrap shop where waste pickers can sell materials at market rates. It is a modelled credit cooperative, started in 1997 after a group of waste pickers realised the dishonesty of existing scrap shops. Members are guaranteed fair pricing and receive a yearly bonus based on their receipts. The shop also provides members with loans and advocates against child marriages.

SWaCH is also involved in making disposal bags for sanitary pads, composting, biogas generation, and e-waste collection. They run a program called *V-Collect* for unused household items and *V-Collect Clothes* for still wearable clothes.



**QUICK FACTS**

**Name:** Swachha Eco Solutions  
**Organisation Type:** Private Limited  
**Location:** Bangalore, India  
**Founded:** 2008  
**Operation:** Waste collection, recycling, making agricultural piping, organics  
**Household served:** 6,000  
**Website:** [www.swachhaecosolutions.com](http://www.swachhaecosolutions.com)



Swachha operates 12 Dry Waste Collection Centres (DWCC) owned by the local municipality. In 2012 they started employing waste pickers and scrap dealers at these centres. In 2014, in collaboration with the local municipality and other partners, they started a plastic processing centre that vertically integrated the recycling process. The centre deals with both high- and low-density polyethylene and has a capacity to recycle five tons of plastic waste daily. Initially they processed packaging into granules to be sold, but they went one step further—building their own pipe extrusion machine to produce agricultural piping (what many of their original PE granule customers were using it for). Later they invested in aggregation centres at two strategic locations in their city in order to minimise travel time and cut down their carbon footprint. They are also heavily invested in the concept of community composting, having partnered with 24 farmers to process segregated biodegradable waste from their operations.

**SWACHHA ECO SOLUTIONS**

Swachha Eco Solutions was launched in 2008 by three innovators—Victoria, Vinay, and Rajesh—with the goal of gifting a zero-waste legacy to future generations. Initially launched as Indus Waste Management, the company aims to be a one-stop solution for waste management and recycling—across waste streams from all sectors. They believe strongly in the importance of route optimisation, research, and the development of new prototypes. Underlying their approach is an emphasis on the importance of constant experimentation.

The company’s founders have experimented with various on-the-ground models as part of their decade-long journey. Currently they provide recycling services and organic waste management for residual layouts, gated communities, apartments, restaurants, hotels, sports facilities, offices, and farms. In addition, they also offer pickup for bulky items, household hazardous waste, and landscape materials.



**BUSINESS CANVAS**

<b>ORGANISATION</b>	Swachha Eco Solutions	<b>ORGANISATION TYPE</b>	Private Limited						
<b>Key partners</b>	<ul style="list-style-type: none"> <li>Bruhat Bengaluru Mahanagara Palike ( BBMP), Bangalore local government</li> <li>Apartments and other clients</li> <li>Karnataka State Pollution Control Board</li> <li>Citizens</li> <li>Investors</li> <li>Farmers (24)</li> <li>Cement factory</li> </ul>	<b>Key activities</b>	<ul style="list-style-type: none"> <li>Collect waste from households and commercial clients</li> <li>Dry Waste Collection Centre management</li> <li>Research and development</li> <li>Transforming collected waste into recycled materials and responsible residual disposal through co-processing</li> <li>Environmental education to households, schools, and community through training and social media</li> </ul>	<b>Value proposition</b>	<p><b>Aim:</b> To be a one-stop solution for waste management consulting services and recycling streams from all sectors</p> <p><b>Value proposition:</b></p> <ul style="list-style-type: none"> <li>Route optimization for collection</li> <li>Provide responsible waste management services</li> <li>Provide added value to the plastic waste stream through R &amp; D and recycling</li> </ul>	<b>Waste output</b>	<ul style="list-style-type: none"> <li>Wet waste for composting to farmers</li> <li>Recycle waste that is collected</li> </ul>	<b>Customers served</b>	<ul style="list-style-type: none"> <li>Households: collection</li> <li>Private companies: collection and consulting services</li> </ul>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Trucks</li> <li>Facility sorting centre</li> <li>Facility for recycling</li> <li>Composting space</li> </ul>	<b>Impact</b>		<ul style="list-style-type: none"> <li>Daily wet waste collection of 3–4 tons for compost processing</li> <li>Total of 1.8–2.0 tons of daily waste recycled</li> </ul>					
<b>Key legislation</b>	<ul style="list-style-type: none"> <li>Solid Waste Management Rules, 2016</li> <li>Plastic Waste Management Rules, 2016</li> <li>Amendment to Plastic Waste Rules, 2018</li> </ul>	<b>Cost structure</b>		<ul style="list-style-type: none"> <li>Staff salaries</li> <li>Facility operational costs (electricity, maint.)</li> <li>Vehicle costs (maintenance, petrol)</li> <li>Safety gear</li> <li>Administration costs</li> <li>Customer care</li> <li>Compost inputs and maintenance</li> <li>Research and development</li> </ul>					
<b>Revenue structure</b>		<ul style="list-style-type: none"> <li>Collection fees from households and businesses</li> <li>Recyclable material sales</li> <li>Compost sales</li> </ul>							



**QUICK FACTS**

**Name:** Temesi Recycling  
**Organisation type:** Community foundation  
**Location:** Temesi, Gianyar, Bali, Indonesia  
**Founded:** 2004  
**Operation:** Composting, organic waste processing to liquid fertilizer and liquid smoke, sortation of recyclables and residues  
**Quantity handled:** 28–32 tons/day  
**Households served:** unknown  
**Website:** <http://temesirecycling.com>



Waste is brought by waste collection partners selected on the quality of their material separation. If too much residue is still mixed in the waste it is rejected. Current output is 7 to 8 tons per day of processed compost, 2 tons of recyclables, and about 5 tons of residues. Most of the processed organic waste results in compost sold to the local government at Rp 1.000/kg. Small quantities of liquid fertiliser are also produced (sold at Rp 15.000/litre) and liquid smoke (a pesticide sold at Rp30.000/litre). The facility employs 25 permanent staff and around 80 per diem staff.

Temesi Recycling has an education centre which has served more than 50,000 people (the facility attracts about 5,000 visitors annually). Temesi Recycling is under supervision of the community-based Temesi Foundation.

**TEMESI RECYCLING**

**Temesi Recycling** is a partnership of the Gianyar Waste Recovery Project, the Rotary Club of Bali Ubud (now disbanded), the Yayasan Bali Fokus Foundation, and Yayasan Gelombang Udara Segar (GUS) Foundation. In 2004 they sought to develop an environmentally friendly, safe, and economically viable waste recovery solution. A facility for daily processing of 4 tons of waste, located next to the Temesi landfill on land owned by the Gianyar Regency local government, was built in 2004. After optimizing collection processes, expansion to 25 tons per day occurred in 2007 and it became one of the first Indonesian organisations to successfully complete the Kyoto Protocol’s Clean Development Mechanism (CDM) process to sell carbon offsets (from composting). Given the stringent CDM requirements, an ISO 9000 quality assurance system and compost testing protocol were also adopted. Today, roughly 30 tons are processed per day, focused primarily on compost. This allows them to restore soil fertility across Bali and divert close to 90 percent of waste from landfills.



**BUSINESS CANVAS: TEMESI RECYCLING**

<b>ORGANISATION</b>	Temesi Recycling	<b>ORGANISATION TYPE</b>	Community foundation		
<b>Key partners</b>	<ul style="list-style-type: none"> <li>BaliFokus</li> <li>GUS</li> <li>Carbon project developers</li> <li>Carbon project validators</li> </ul>	<b>Key activities</b>	<b>Value proposition</b>	<b>Waste output</b>	<b>Customers served</b>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Composting facility</li> <li>Laboratory</li> </ul>	<ul style="list-style-type: none"> <li>Industrial-scale quality composting</li> <li>Carbon reduction and carbon management</li> <li>Research on organic processing methods (e.g., natural liquid fertilisers and pesticides)</li> <li>Sorting of recyclable materials</li> <li>Sales of recyclables</li> <li>Environmental education</li> </ul>	<p><b>Aim:</b> Develop environmentally friendly, safe, and economical waste recovery solutions that restore the Bali ecosystem by diverting 90% of waste from landfill</p> <p><b>Value proposition:</b></p> <ul style="list-style-type: none"> <li>Economically sustainable, quality composting facility and recyclable recovery centre</li> </ul>	<ul style="list-style-type: none"> <li>Compost: Aerated table top method</li> </ul>	<ul style="list-style-type: none"> <li>Waste collection service providers: EcoBali, Padangtegal Compost House</li> <li>Organic buyers: villas, resorts, government facilities</li> </ul>
<b>Key legislation</b>	<ul style="list-style-type: none"> <li>Gianyar Local Regulation 11, 2013</li> </ul>			<b>Impact</b>	
<b>Cost structure</b>	<ul style="list-style-type: none"> <li>Manpower (contracted and non-contracted)</li> <li>Facility operational costs (electricity, maintenance)</li> <li>Quality-testing laboratory</li> <li>R&amp;D of organic processing methods</li> <li>Administration costs</li> <li>CDM credit certification and audits</li> </ul>		<b>Revenue structure</b>	<ul style="list-style-type: none"> <li>Compost sold to government and resorts (Rp 1,000/kg)</li> <li>Liquid fertiliser (Rp 15,000/litre)</li> <li>Liquid smoke pesticide (Rp 30,000/litre)</li> <li>Recyclable materials kept by waste sorters</li> <li>Carbon credits from CDM market</li> </ul>	



**QUICK FACTS**

**Name:** TriCiclos  
**Organisation type:** B corp  
**Location:** Santiago, Chile; São Paulo, Brazil  
 Founded: 2009  
**Operation:** Collection, sortation, education, consulting  
**Quantity handled:** Over 5 million visits to clean points  
 Website: <http://triciclos.net/>

**TRICICLOS**

TriCiclos, founded in 2009, was not only the first Certified B Corp in Chile, but also the first outside of North America.

It is a circular economy engineering company specialising in the creation and implementation of product and process solutions. The mission is to design, implement, and promote solutions that correct generations of flawed waste management. Their main expertise is centred on helping the consumer goods industry move towards a circular business model. Solutions are both upstream (with design approaches for products and business models) and downstream (closing the loop on different types of products and materials).

Downstream, TriCiclos has the largest network in Latin America of pre-recycling stations (Puntos Limpios or “Clean points”) that work as collection centres and material recovery plants. Up to 22 types of material are recovered. Citizens can bring recyclables and learn how their efforts generate a positive impact on the environment. TriCiclos Chile and Brazil have recovered more than 36,354 tons of material from more than 5 million residents. These pre-recycling stations are managed by operators who oversee material separation, compacting, and

environmental education. Some Puntos Limpios (mostly in Brazil) are operated in partnership with waste pickers that TriCiclos hires through cooperatives as service providers, supporting their empowerment.

After learning the complexities of packaging and recycling, TriCiclos decided to go upstream in search of solutions to the problems of waste management. With a circular economy consultancy, TriCiclos advises both companies and public bodies on projects that promote sustainability and facilitating the transition towards sustainable development.

TriCiclos has developed a tool showing consumer packaged goods companies (CPGs) how they can redesign their products for easier recyclability. The Recyclability Index Tool (RI, Índice de Reciclabilidad) gives the probability that an item will be recycled in a particular region. Working with the Sustainable Packaging Coalition, the New Plastics Economy, and McDonough Innovation, they’ve done material analysis mapping for more than 14,256 stock keeping units (SKUs) in Chile, Brazil, Peru, and Colombia.



**BUSINESS CANVAS: TRICICLOS**

<b>ORGANISATION</b>	TriCiclos	<b>ORGANISATION TYPE</b>	B Corp						
<b>Key partners</b>	<ul style="list-style-type: none"> <li>Corporations</li> <li>Waste picker cooperatives</li> <li>Recyclers</li> </ul>	<b>Key activities</b>	<ul style="list-style-type: none"> <li>Industry (extraction): Increase efficiency of processes and services</li> <li>Industry (consumer goods): Apply concepts of circular economy and cradle-to cradle business</li> <li>Retail: Promote integrated waste management through the operation of collection points and consumer awareness</li> <li>Transformers and recyclers: Solutions for materials with low recyclability</li> <li>Cooperatives: Inclusion and strengthening position of waste pickers</li> </ul>	<b>Value proposition</b>	<p><b>Aim:</b> Circularise current linear chain of extraction, production, consumption, and disposal</p> <p><b>Value proposition:</b></p> <ul style="list-style-type: none"> <li>Design customised solutions for each link in the chain— production, consumption, and disposal— in Latin America</li> </ul>	<b>Waste output</b>	<ul style="list-style-type: none"> <li>Sorted, cleaned, and baled recyclables</li> </ul>	<b>Customers served</b>	<ul style="list-style-type: none"> <li>Industry</li> <li>Consumer goods manufacturers</li> <li>Retailers</li> <li>Universities and schools</li> <li>Government</li> </ul>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Sorting facilities, including specialised knowledge of recyclable materials (Ponto Limpo collection points)</li> <li>Compactor, weight machine</li> <li>Trucks (Chile)</li> </ul>				<b>Impact</b>	<ul style="list-style-type: none"> <li>Over 6,346 tons of recyclable material recovered (Chile and Brazil)</li> <li>Over 1,542,859 people in Brazil impacted by environmental education at collection points</li> </ul>			
<b>Key legislation</b>	<ul style="list-style-type: none"> <li>Chile: REP, Law of Solid Waste</li> <li>Brazil: National Law of Solid Waste, 12.305\10</li> </ul>								
<b>Cost structure</b>	<ul style="list-style-type: none"> <li>Staff salaries</li> <li>Administration costs</li> <li>Facility (Pontos Limpos) operational costs (equipment maintenance, collection fees)</li> </ul>		<b>Revenue structure</b>			<ul style="list-style-type: none"> <li>Custom consulting</li> <li>Fees at collection points</li> <li>Business collection service fees (Chile)</li> <li>Sorted recyclable material (Chile)</li> </ul>			



### QUICK FACTS

**Name:** vRecycle Waste Management Services

**Organisation type:** Proprietorship

**Location:** Goa, India

**Founded:** 2009

**Households served:** 10,000

**Others served:** Set up over 2000 composters and 150 community recycling points

**Website:** [vrecycle.in/about\\_us](http://vrecycle.in/about_us)

## VRECYCLE WASTE MANAGEMENT SERVICES

Launched in 2009, **vRecycle Waste Management Services** is based in Goa, India. Its premise is that not everyone has the time or interest to manage their waste and that vRecycle can do it for them.

vRecycle has five different product and service offerings:

- Waste pickup services for individuals, communities, and Panchayats (units of local government)
- Setting up and managing recycling bins and composters in homes, community recycling stations, composting stations for institutions and communities, and composters for garden waste (including chippers and shredders)
- Buying recyclables, both unsorted and sorted, either picked up from homes (for a fee) or deposited at a central facility (no fee)
- Design and consultancy
- Education programmes, including a basic and advanced waste awareness presentation (45 minutes), film screening (90–120 minutes), awareness session and activities (90 minutes), field visit (60–180 minutes), and field activity for a village dry waste collection system (60–120 minutes).

vRecycle operates out of a warehouse located at the Margao Industrial Estate. It services over 45 community sites, 60 individual sites, and 2 village panchayats.

Clinton Vaz, founder of vRecycle, started operations with an initial investment of Rs10,000. With his father's borrowed car he did pick-ups once a week. Today, he has two vehicles of his own and is completely self-sustaining. He believes that it is important to offer flexible solutions to make his model work. The company's gross is about 80 lakhs a year with a decent profit margin of Rs 1 lakh a month. The company's waste recovery (i.e. diversion from landfill) is about 80 percent. Expansion plans include offering a franchisee model.





**QUICK FACTS**  
**Name:** Waste4Change (originally joint venture with EcoBali)  
**Organisation type:** Social enterprise  
**Location:** Jakarta and Bekasi, Indonesia  
**Founded:** 2013  
**Operation:** Education, training, collection, recycling, disposal  
**Quantity handled:** 9–11 tons/day  
**Households served:** 1,600  
**Other clients served:** 12 offices, 3 cafes, 5 embassies  
**Website:** [waste4change.com](http://waste4change.com)

**WASTE4CHANGE**

Greeneration Indonesia is an environmental organisation based in Bandung focused on sustainable consumption and production. To accomplish their mission they opened a waste management division in 2012. A year later, they met with EcoBali Recycling (see EcoBali) and founded **Waste4Change**, now headquartered in Bekasi, Indonesia.

Waste4Change aims to be a provider of responsible waste management in Indonesia. Currently it provides four distinct services, abbreviated as 4C: campaign, consult, collect, and create.

Campaign aims to educate on why and how waste should be managed, while consult provides training and consulting service to organisations ready to be more responsible.

Collect is the primary waste collection service, providing responsible waste management to households and businesses, including initial training on separating waste pre-collection. Waste statistics are tracked so companies can monitor and report their progress.

All collected waste undergoes any required post-collection separation, then is recycled, composted, or safely disposed of as part of the last service type—Create.



Revenue streams for Waste4Change come primarily from business waste collection fees, management fees, and consulting fees. For example, PRAISE (an association of consumer packaged goods companies in Indonesia including Danone, Unilever, Nestle, Coca Cola, IndoFoods, and TetraPak) is receiving services for their packaging recyclability campaign.

Waste4Change currently operates two sites. The first is in Bekasi, where they receive about 4 tons daily, including 1 tonne of compost and 500 kilograms of recyclables. Their other site in Jakarta receives 5 to 7 tons per day from commercial clients, who have joined the Zero Waste to Landfill (ZWTL) programme to minimise waste disposed in landfills. This includes collaboration with a cement factory that uses residues as fuel.



**BUSINESS CANVAS: WASTE4CHANGE**

<b>ORGANISATION</b>	Waste4change	<b>ORGANISATION TYPE</b>			
<b>Key partners</b>	<ul style="list-style-type: none"> <li>Ministry of Environment and Forestry</li> <li>Dinas Lingkungan Hidup Provinsi DKI Jakarta</li> <li>Kementerian Lingkungan Hidup</li> <li>Bergerak Indonesia Bebas Sampah</li> <li>Cement factory</li> </ul>	<b>Value proposition</b>	<b>Waste output</b>	<b>Customers served</b>	
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Waste4Change brand</li> <li>Trucks</li> <li>Facility sorting centre</li> <li>Composting site</li> </ul>	<p>Their 4 C's</p> <ul style="list-style-type: none"> <li>Consulting: training and feasibility studies</li> <li>Campaign: environmental education to companies, households, schools, and the community</li> <li>Collect: waste from households and commercial clients, waste separation training</li> <li>Create: transform collected waste into either recycled materials or responsible residual disposal to landfill</li> </ul>	<p><b>Aim:</b> Creating responsible waste management</p> <p><b>Value proposition:</b> Provide responsible, transparent waste management services from upstream to downstream</p>	<ul style="list-style-type: none"> <li>Organic: windrow composting and black soldier fly</li> <li>Recyclables: handled by waste picker entrepreneurs</li> </ul>	<ul style="list-style-type: none"> <li>Households: collection</li> <li>Private companies: collection and consulting services</li> <li>Government: consulting services</li> </ul>
<b>Key legislation</b>	<ul style="list-style-type: none"> <li>DKI Jakarta Local Regulation, 3/2013: Waste Management</li> </ul>		<b>Impact</b>		
			<ul style="list-style-type: none"> <li>Less than 25% of collected waste disposed in landfill</li> </ul>		
<b>Cost structure</b>	<ul style="list-style-type: none"> <li>Staff salaries</li> <li>Facility operational costs (electricity, maintenance)</li> <li>Vehicle costs (maintenance, petrol)</li> <li>Landfill tipping fee</li> <li>Safety gear</li> <li>Administration costs</li> <li>Customer care</li> </ul>				
	<b>Revenue structure</b>				
	<ul style="list-style-type: none"> <li>Collection fees from households and businesses</li> <li>Recyclable material sales</li> <li>Sale of black soldier larvae</li> <li>Compost sales</li> <li>Management fee for education campaigns</li> <li>Management fee for consulting services</li> </ul>				



**QUICK FACTS**

**Name:** YouGreen Cooperativa  
**Organisation type:** Waste picker cooperative  
**Location:** São Paulo, Brazil  
**Founded:** 2011  
**Operation:** Full waste stream collection, sortation, bundling with traceability, material consultancy services  
**Quantity handled:** 100 tons/month  
**Corporate clients served:** 45  
**Website:** <http://www.yougreen.com.br/>



**YOUGREEN COOPERATIVA**

The **YouGreen Cooperativa**, located in São Paulo, Brazil, currently employs 35 waste pickers. The fundamental tenant of cooperatives is to seek shared, as opposed to individual, prosperity. This guides their work and socioeconomic model.

The cooperative was formed independently in 2011 after attempts to partner with the government were unsuccessful. It is led by a former waste picker with a background in logistics and engineering who saw an opportunity to improve waste management efficiency after a weekend spent volunteering for the Red Cross in Rio de Janeiro. The aim of the cooperative is to improve the quality of life of waste pickers, both financially and otherwise, while also providing waste collection, sortation, awareness, diagnostics, and reverse logistics services to environmentally like-minded businesses. YouGreen also aims to develop and provide opportunities for other groups of waste pickers.

Currently material collection services are provided to approximately 45 corporate clients throughout São Paulo. Collected waste is brought to YouGreen’s efficient central facility, where it is sorted, cleaned, and sold to recyclers. Sophisticated tracking software details monthly waste generation and recycling levels for each client by material, allowing clients to fulfil EPR mandate requirements. This data is also used to continually improve each client’s waste management process. What’s more, YouGreen’s pricing is transparent and their recycling services are less expensive than landfill tipping fees, making it easy for businesses to act in environmentally responsible ways. Education services for the community, as well as self-improvement courses for members and other cooperatives, are also part of the programming.

YouGreen is currently managing 100 tons of waste a month. As part of expansion plans—and to improve the level of service provided to current clients—they are considering employing a social franchising model that would see them partner with cooperatives around Brazil in order to provide the same level of service, traceability, and data over a broader area.

**BUSINESS CANVAS: YOUGREEN COOPERATIVA**

<b>ORGANISATION</b>	YouGreen	<b>ORGANISATION TYPE</b>	Waste picker cooperative						
<b>Key partners</b>	<ul style="list-style-type: none"> <li>Cooperatives of waste pickers</li> <li>Retalhar (company working on reverse logistics of clothing)</li> <li>Cicla Brasil (company focused on social inclusion)</li> </ul>	<b>Key activities</b>	<ul style="list-style-type: none"> <li>Diagnose client waste practices</li> <li>Teach clients to sort and separate waste</li> <li>Collect entire waste streams</li> <li>Sort and bail materials in lots (by company)</li> <li>Provide detailed monthly reports to clients along with suggestions for better practices</li> <li>Sell recyclables</li> <li>Educate cooperative members</li> <li>Educate school and community groups</li> </ul>	<b>Value proposition</b>	<p><b>Aim:</b> Materially improve the quality of life of the waste pickers</p> <p><b>Value proposition to companies:</b> Provide waste collection, sortation, awareness, diagnostics, and material recovery reports for EPR mandates</p> <p><b>Value proposition to other cooperatives:</b> Through social franchising, expand corporate customers pool while providing education and operational efficiency improvements</p>	<b>Waste output</b>	<ul style="list-style-type: none"> <li>Sorted, cleaned, and baled recyclables</li> </ul>	<b>Customers served</b>	<ul style="list-style-type: none"> <li>Companies</li> <li>Other waste picker cooperatives</li> </ul>
<b>Key Resources</b>	<ul style="list-style-type: none"> <li>Trucks</li> <li>Sorting facilities</li> <li>Waste tracking software, including client report generation</li> </ul>				<b>Impact</b>	<ul style="list-style-type: none"> <li>Collection of 100 tons/month</li> <li>Stable living for 35 waste pickers</li> <li>Six franchised cooperatives</li> <li>Categorisation of 37 different types of recyclables</li> </ul>			
<b>Key legislation</b>	<ul style="list-style-type: none"> <li>REP Law Brazil</li> <li>National Law Of Solid Waste, 12.305\10</li> </ul>								
<b>Cost structure</b>	<ul style="list-style-type: none"> <li>Staff salaries</li> <li>Facility operational costs (electricity, maintenance)</li> <li>Vehicle costs (maintenance, petrol)</li> <li>Landfill tipping fee</li> <li>Safety gear</li> <li>Administration costs</li> <li>Customer care</li> </ul>		<b>Revenue structure</b>	<ul style="list-style-type: none"> <li>Collection fees from businesses</li> <li>Recyclable material sales</li> <li>Franchising fees</li> </ul>					



### QUICK FACTS

**Name:** Yaksa Pelestari Bumi Berkelanjutan (YPBB)

**Organisation type:** Association

**Location:** Bandung, Cimahi, and Soreang, Jawa Barat, Indonesia

**Households served:** 8,021

YPBB had been actively building awareness of eco-friendly lifestyles for many years. It then joined forces with the Mother Earth Foundation (Philippines) and other organisations to pilot a Zero Waste program (Kawasan Bebas Sampah) in Bandung municipality in 2015.

This program is part of the Asia Pacific Action Against Plastic Pollution: Reducing Land-Based Leakage of Plastic Waste in Philippines and Indonesia Through Zero Waste Systems and Product Redesign, which aims to prevent 14,000 tons of plastic from leaking into the ocean each year. It consists of door-to-door behaviour change education, waste separation, and reduction of landfill waste by 30 percent through organic processing and recycling. Activities include green profiling, consulting with stakeholders, establishing a waste council at district level, developing an integrated waste management regulatory system, training waste collectors, door-to-door education, experimentation and system improvement, and law enforcement.

Besides international zero-waste organisations, YPBB has joined forces with other stakeholders to actively lobby and support the municipalities government (currently focusing at Citarum River region) in drafting environmentally sound waste management and waste reduction regulation, building MSWM masterplan and other waste governance aspect.

YPBB's campaign in the long term is on the aspect of waste reduction. The disaggregated waste collection system that is encouraged through regulation and technical implementation is an intermediary strategy to achieve conditions where there is a separation between recyclable waste and residue. Waste segregation is not only intended to improve processing and recycling,

but also as a way for the government to develop waste reduction policies. Through sorting, the government can monitor the types of waste and those responsible for residual waste that overload the public waste management system. This will open the way to identify and monitor the parties responsible for residual waste and regularly carry out waste audits and brand audits. This approach is used to develop policies to ban or limit products and packaging that are routinely reported to the city government, and in the future it is hoped that the central government can develop policies and implement EPR based on a strong database.

YPBB also conducts training for volunteers from local cadres and others, including training for waste workers in supporting the implementation of the system in the area. For areas that do not have facilities or land for processing waste, YPBB works closely with The Environmental Agency of city to serve the transportation of disaggregated waste, especially organic waste. Currently 10 sub-sub-districts in Bandung and eight sub-sub-districts in Cimahi have received door-to-door education, with approximately 7,742 (45 percent compliance rate) separating their waste. Efforts have been especially strong in Cimahi city, where YPBB is the official waste partner of the Cimahi municipality government, serving 100 percent of the city. For Bandung city, waste diversion rate is 16,15% or 658,12 kg, consist of organic waste 563,74 kg, recyclable plastic 72,91 kg, other recyclables 21,47 kg and compliance rate 34,38 % or 3189 households. For Cimahi city, waste diversion rate is 35,17 % or 1808,78 kg, consist of organic waste 1503,44 kg and recyclables 305,34 kg, while the compliance rate 56,11%. For Soreang District waste diversion of organic waste is 223,93 kg and recyclable 18,83 kg, while compliance rate is 61,56% or 1062 households.



### BUSINESS CANVAS: YPBB

ORGANISATION	YPBB	ORGANISATION TYPE	Foundation		
Key partners	<ul style="list-style-type: none"> <li>Mother Earth Foundation</li> <li>Bandung Municipality government</li> <li>Cimahi municipal government</li> <li>Bandung Cleanliness Corporation</li> </ul>	Value proposition	420 kg/day of recyclables and compostable	Customers served	<ul style="list-style-type: none"> <li>Residents of Bandung, Cimahi (Jawa Barat, Indonesia) and Soreang District</li> </ul>
Key activities	<ul style="list-style-type: none"> <li>Green profiling</li> <li>Consulting with stakeholders</li> <li>Establishing waste council at district level</li> <li>Developing municipal waste management system and regulation</li> <li>Training waste collectors</li> <li>Behaviour change training</li> <li>Experimenting with system improvement</li> <li>Fully implementing waste management system</li> <li>Law enforcement</li> </ul>	Value proposition	<p><b>Aim:</b> Prevent annual 14,000 tons of plastic flow into ocean with door-to-door education (100%), waste separation (90%), and reduced landfilled waste (30%)</p> <p><b>Value proposition:</b> Guide the local government in implementing a responsible waste management system</p>	Impact	<p>For Bandung city, waste diversion rate is 16,15%.</p> <p>For Cimahi city, waste diversion rate is 35,17 %.</p>
Key Resources	Mother Earth Foundation principles of sustainable solid waste management	Key legislation	<ul style="list-style-type: none"> <li>Waste Management Law 18, 2008</li> <li>Government Regulation 81, 2012</li> <li>Bandung Local Regulation 9, 2011</li> <li>Cimahi local regulations</li> </ul>		
Cost structure	<ul style="list-style-type: none"> <li>Operation of education program</li> <li>Manpower</li> <li>Advocacy campaign</li> <li>Education</li> </ul>	Revenue structure	Grant from Ford Foundation to fund the YPBB program		

BACK PAGE