

# Enabling green jobs and circularity in Rwanda's construction sector

**Babette Never**

The World Bank's Solutions for Youth Employment Webinar

**April 30, 2024**



**IDOS**

German Institute  
of Development  
and Sustainability

# What potential is there in green cities?

Urbanization trends in low- and middle-income countries require thinking of innovative ways to develop compact cities with mixed neighborhoods and uses

African cities will be home to an additional 950 million people – and 80% of the buildings required in 2050 are yet to be built (OECD, 2020)

It is necessary to build new infrastructure differently to:

1. Avoid the lock-in of extremely high carbon emissions
2. Explore the adaption potential of blue-green infrastructure
3. Build resource efficiently
4. **Exploit the enormous employment potential of green cities**

Wakanda City, Movie „Black Panther“, Marvel Studios

# Industrial policy advantages of compact cities

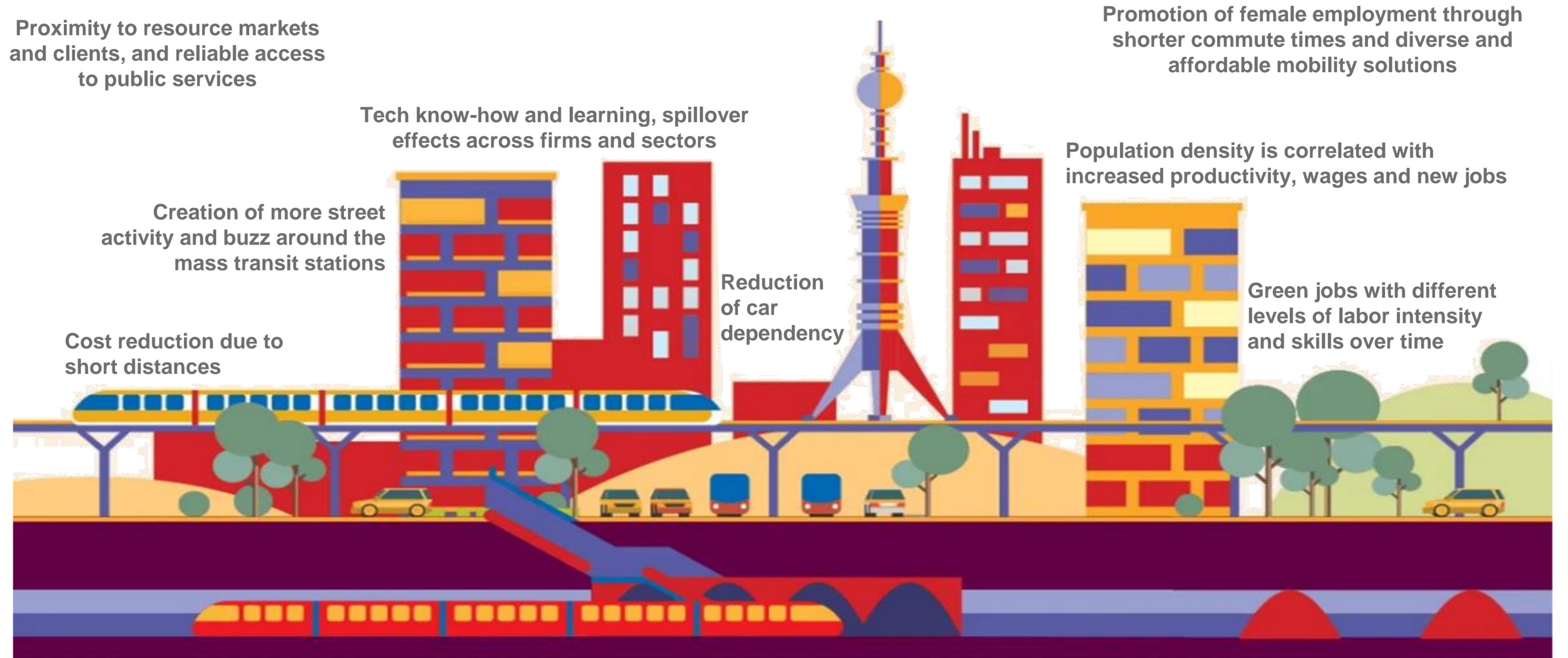


Figure source: Chew (2018).

# Examples for green buildings and materials in Rwanda

I&M Bank Headquarters, Kigali



Norrskan Kigali House



Photo: Chris Schwagga

Compressed stabilized earth block (alternative to concrete)



Adobe blocks „Rukarakara“



Clay brick types



**Thank you**

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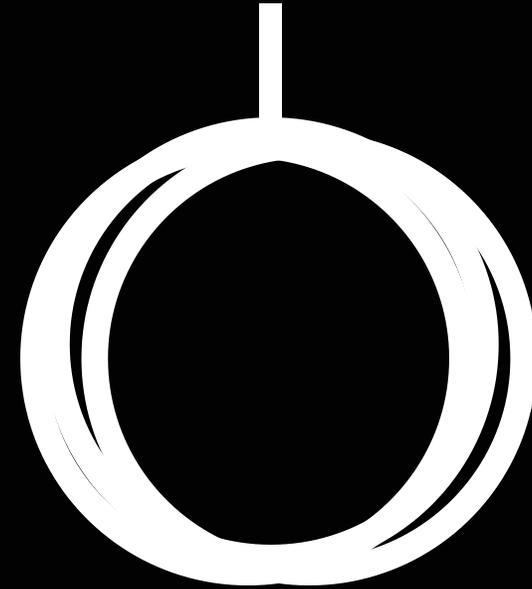


How does circular  
economy look like in the

**Construction**

**Materials**

industry?



Adriana Valero  
Global Manager for Urbanization Solutions  
**CEMEX**

The World Bank's Solutions for Youth Employment Webinar  
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By 2050, 2 out of 3  
people will be living in cities



We will need...

**230 billion m<sup>2</sup>**  
of new floor area

=

Building a

**New York City**

every month for 40 years



# The building sector is responsible for...

50%

of all extracted materials

33%

of waste generation globally

50%

of global energy consumption



# The building sector is responsible for...

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Ready-mix concrete, is the most used man-made material in the world;

it plays an essential role in society's development

...and it is infinitely recyclable



# Future in Action

Future in Action is CEMEX's program to **achieve sustainable excellence** through climate action, circularity, and natural resource management with the **primary objective of becoming a net zero CO2 company by 2050**



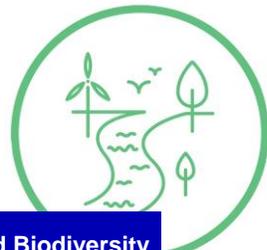
Sustainable Products & Solutions



Decarbonizing our Operations



Circular Economy



Water and Biodiversity



Innovation and Partnerships



Promoting a Green Economy



# The cement, aggregates and concrete industry, can transform waste into **sustainable new use**

## Regenera

Committed to Circularity



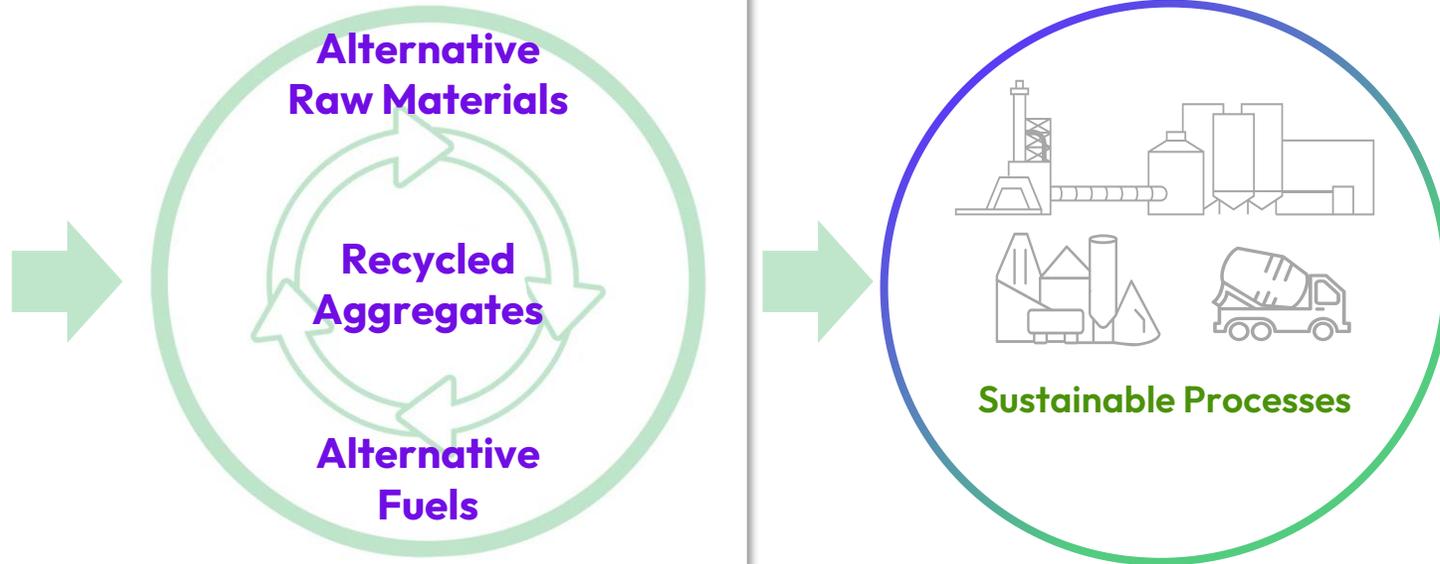
**1**  
Municipal and Industrial Waste



**2**  
Construction, Demolition and Excavation Waste



**3**  
By-Products



**Avoid waste reaching landfills, rivers and oceans**

Linear  
Economy

Recycling  
Economy

Circular  
Economy



# Regenera

Committed to Circularity

Generation

Collection

Sorting &  
Processing

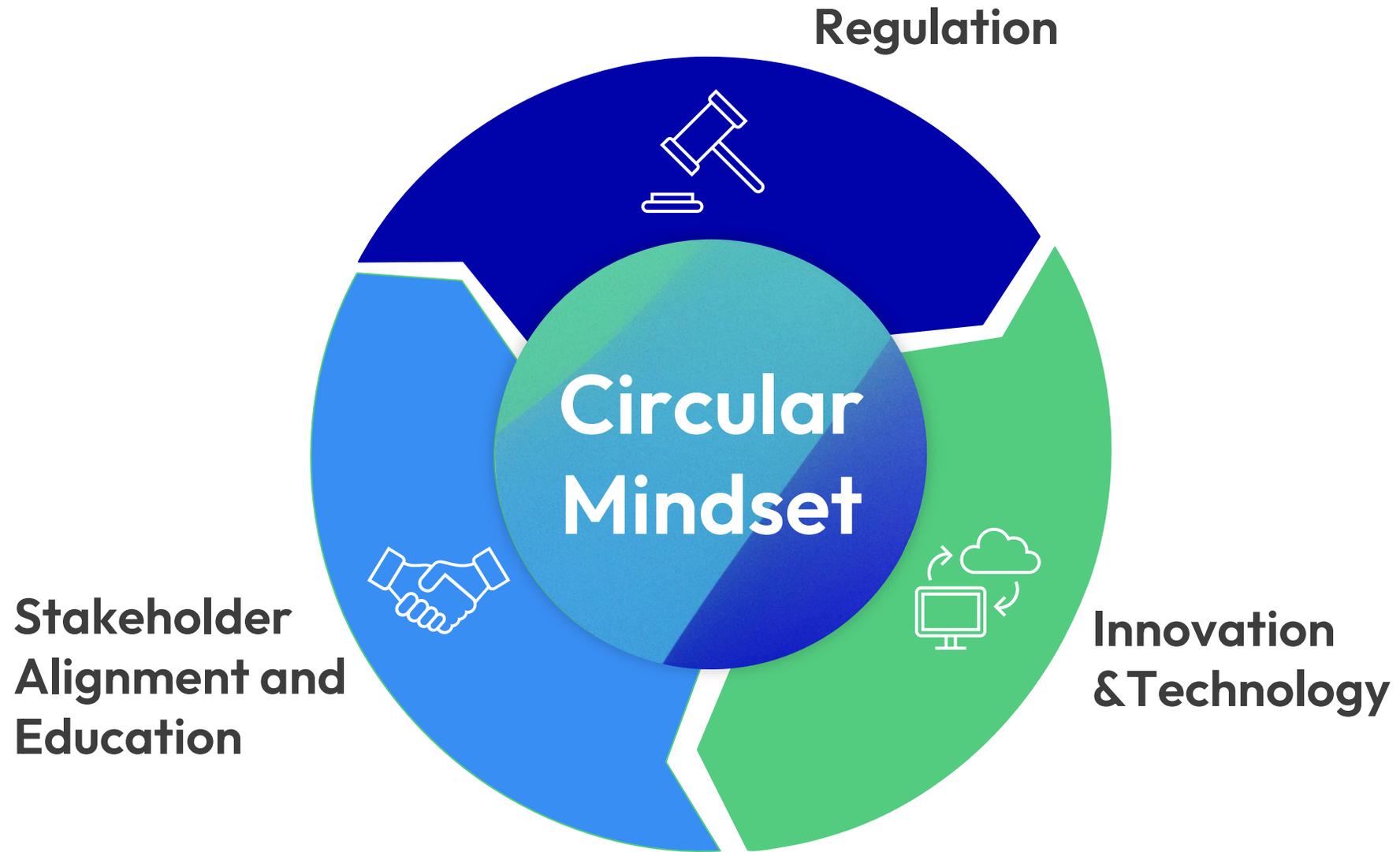
Recycling &  
Reutilization

Final  
Disposition

- **Commercial alliances** with third party waste stream operators
- **Long-term contracts**

- **Alliances**
- **Joint Ventures**
- **Own operation**

- **Own operation/ consumption**
- **Sale to 3rd parties**





Leap Masterclass: Adding Value in the Sustainable Design Process



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Decarbonizing Our Operations

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Welcome to the Leap Masterclass: Sustainable Construction Series

Skill Plan

### Sustainability Academy

This academy is designed to offer a variety of content related to our CEMEX Sustainability Model and our commitment to the United Nations Sustainable Development Goals (UN SDGs).



Scope

+25

Countries

Courses

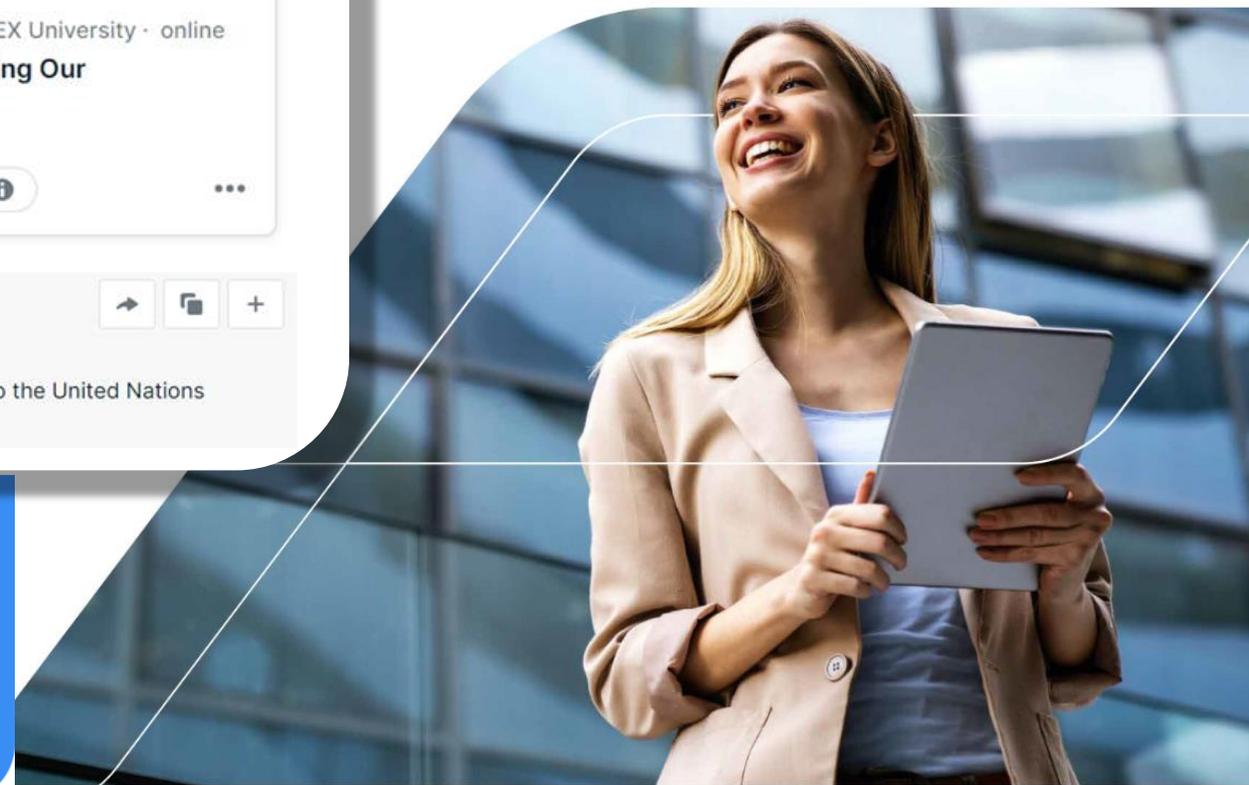
+150

Learning Experiences

Community

+23,000

Learners





**~70% of our Supply Chain** is comprised of local Small and Medium Enterprises around our operations

## UNGC Sustainable Supplier Impact Program



United Nations  
Global Compact

### SUSTAINABLE SUPPLIER IMPACT PROGRAMME

A 5 module, hybrid learning program with **~1,200 participants in 5 geographies** from Apr – Sept 2023

- Value of Sustainability in business
- Climate Action
- Gender & SMEs panel
- Sustainability Journey

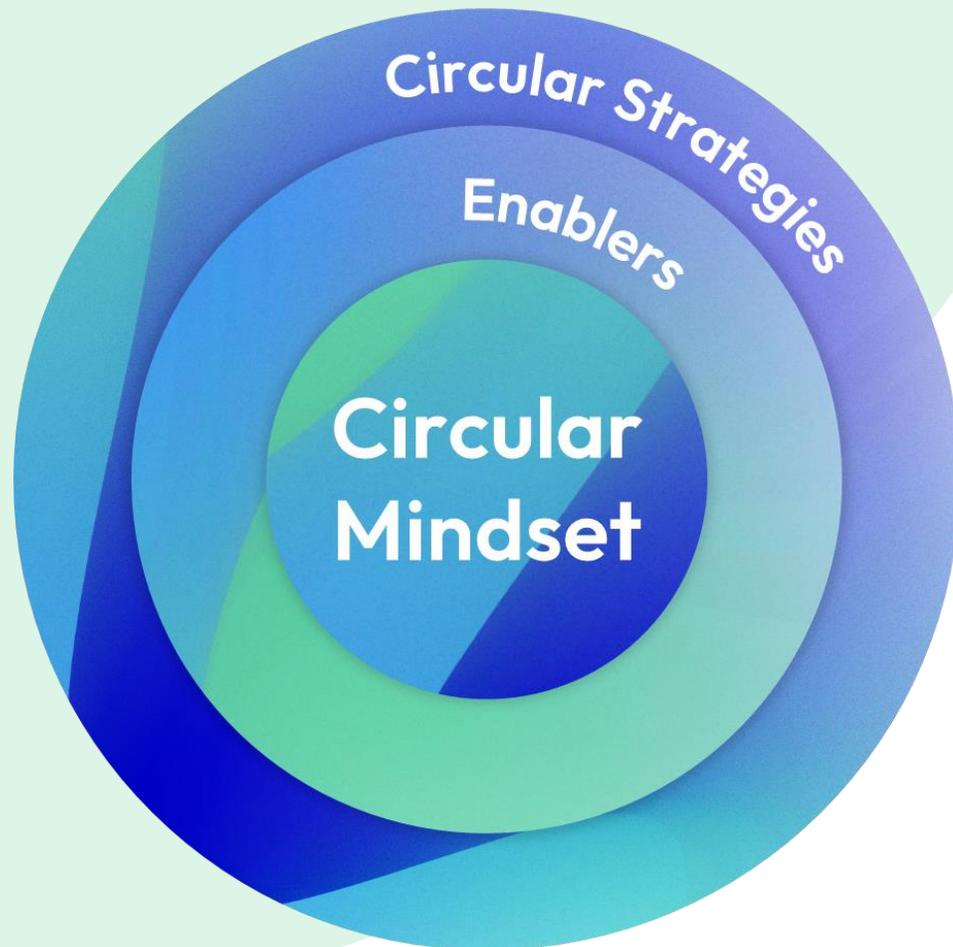


**Educational Program**  
on the Circular Economy



Environmental awareness programs aimed at children and young people to encourage them to discover and respect the environment.

By **embracing circularity**,  
we not only help safeguard the planet...  
but also unlock  
**SUSTAINABLE PROSPERITY**



**Regenera**  
Committed to Circularity

# MALBA PROJECT

Tech-enabled C&D Waste Collection for Cleaner Indian Cities

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<https://www.malbaproject.com/>

MALBA  
PROJECT

# About Malba Project

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C&D waste, or 'Malba' as we call it in Hindi, accounts for 30 to 40% of the solid waste generated globally. It contributes significantly to air and water pollution, impacts human health & well-being, and is a topic of grave concern for developing urban metropolises around the world.

Malba Project was established in September 2021 with a vision to **prevent the illegal dumping of malba in Indian cities.**

While Malba Project is rooted in research and advocacy, we take a solution-oriented approach to tackle this problem.





# Problem of C&D Waste Collection

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Delhi generates 10,000 tons of Malba per day. Despite 5 C&D Waste Recycling Plants, lack of a proper decentralised collection system leads to 5000 tons per day of malba being illegally dumped along the riverbank, on roadsides, in protected forested areas, empty plots, drains and parks.

This contributes to around 30% of air pollution and clogs the city's natural drainage causing problems such as urban flooding, groundwater pollution, and land degradation. (CSE, 2020)

865,755,000,000 kg CO<sub>2</sub>-e/y



**Social Impact**  
**=**  
**Opportunity**

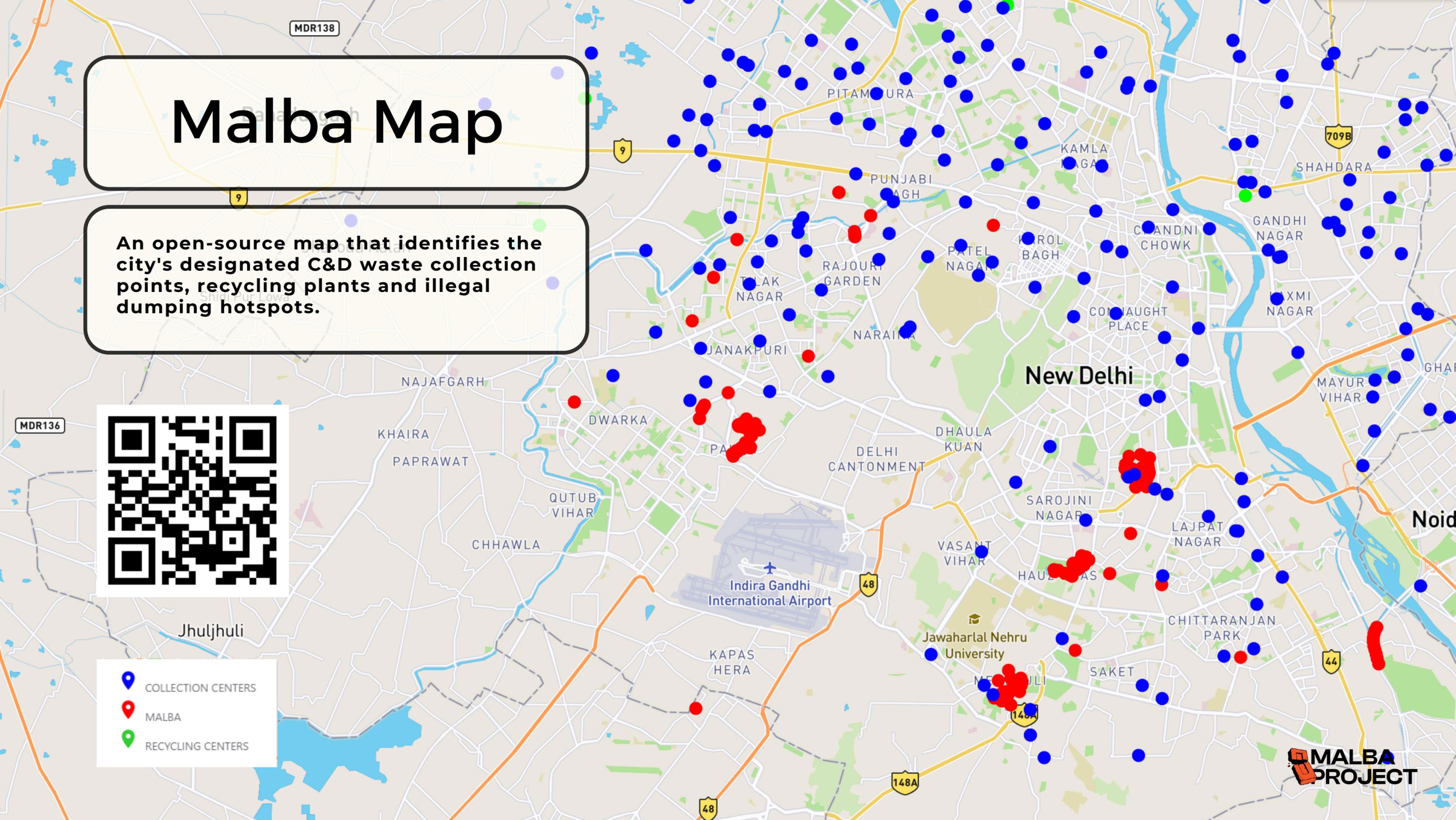


# Malba Map

An open-source map that identifies the city's designated C&D waste collection points, recycling plants and illegal dumping hotspots.



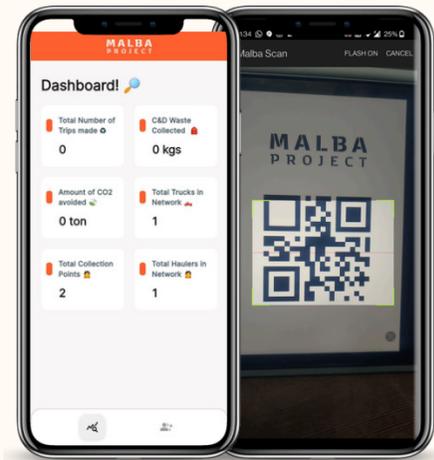
-  COLLECTION CENTERS
-  MALBA
-  RECYCLING CENTERS





# The MyMalba Management System

A readily deployable suite of solutions for cities to manage their malba.



## MalbaScan

ULB-focused Collection Point Management App

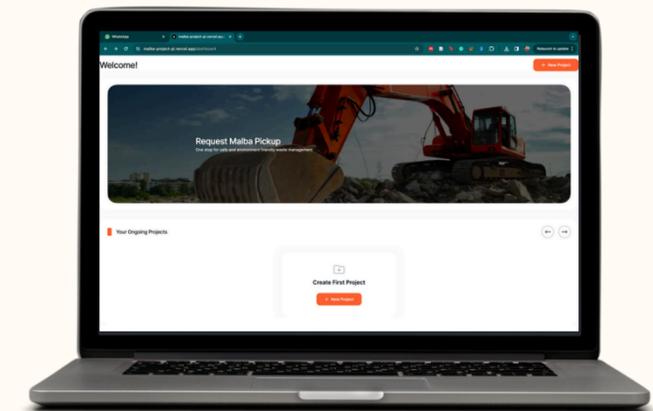
- ✔ Digital check in of malba
- ✔ Collection Point data management
- ✔ Waste-KPI Dashboard for ULB



## MyMalba Saathi

Hauler-focused Waste Deposition Interface

- ✔ Low-tech interface for haulers
- ✔ Multi-mode pickup (redi, truck, etc.)
- ✔ Vehicle document verification
- ✔ Education on norm-compliance



## MyMalba

Client-focused Waste Pick Up WebApp

- ✔ Single POC for all waste types
- ✔ Waste Pickup Scheduling & Tracking
- ✔ Easy tracking of Recycling Receipts
- ✔ Streamline waste-fee payment

# Pilot Projects

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Through pilot projects commissioned by the Municipal Corporation of Delhi in Najafgarh and Karol Bagh in Delhi in 2022 and 2023, Malba Project built a network of 49 trucks and 19 redis (bicycle-drawn carts), trained haulers and MCD personnel, conducted IEC activities with residents, and over a span of 4 months, successfully diverted over 5 million kg of Malba from illegal dumping.





**5+ million kg**

Malba Diverted From Illegal Dumping

**35,473 kg-CO<sub>2</sub>e**

Carbon emissions avoided

**864 sqm**

Arable land saved

**49**

Malba trucks in the network

**19**

Malba redis in the network

**40-90%**

Increase in hauler's profits

# Testimonials



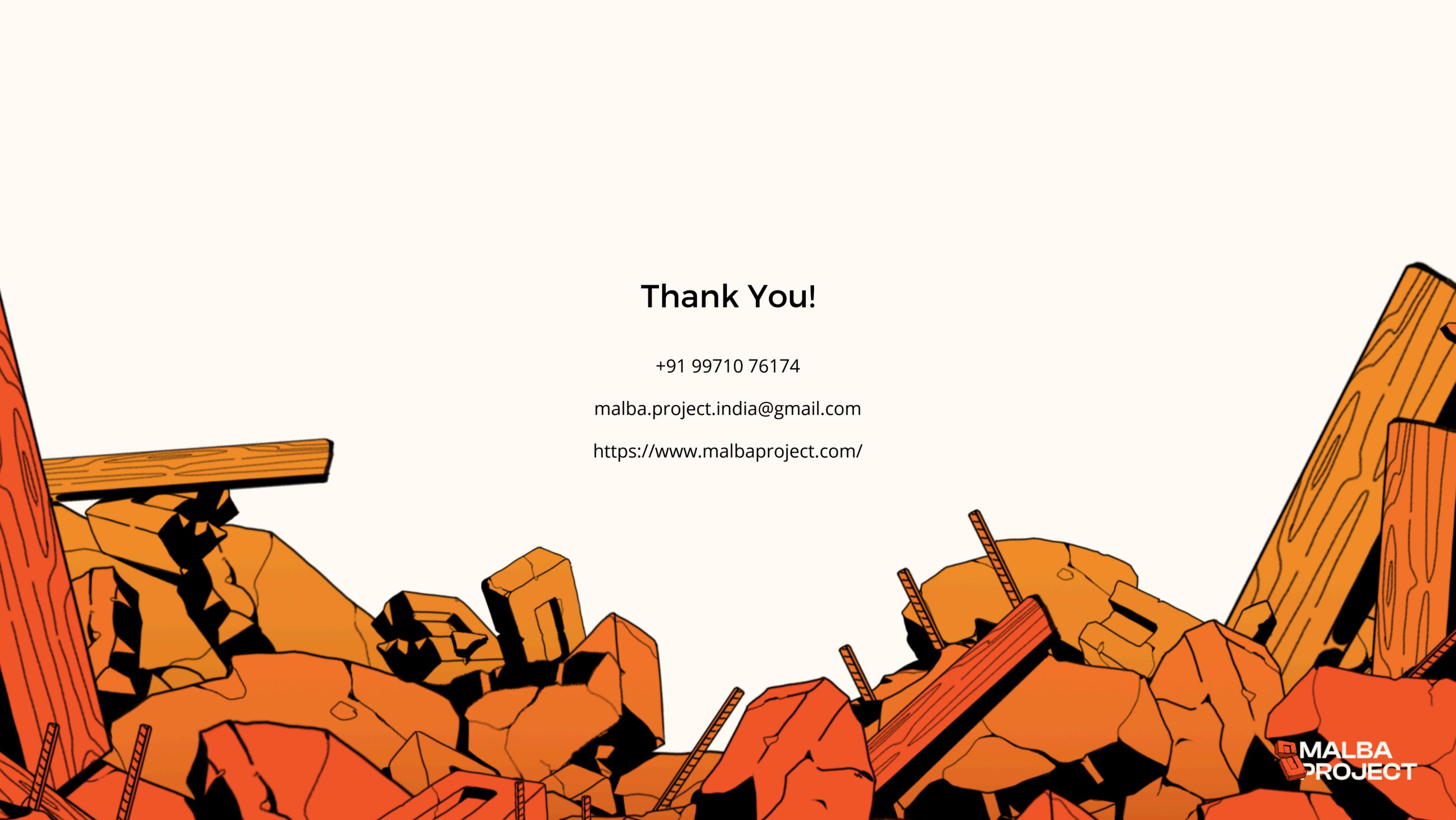
“The MCD has an established C&D waste management system, but lacks a sustainable primary collection mechanism. The pilot with Malba Project successfully onboarded all stakeholders and created a robust connection between C&D waste collection and the processing chain. They collected over 2 million kgs of malba in 6 weeks, and I highly recommend other cities to work with them.”

**Kumar Abhishek**  
Deputy Commissioner, MCD Karol Bagh Zone



“Initially, we did not have an authorized space to dump malba which resulted in illegal malba dumping. We were glad to have an authorized collection point for malba dumping, it saved us from a lot of trouble. Another benefit was being able to get more work from contractors who were looking for responsible malba dumping options.”

**Mukesh**  
Malba Hauler



Thank You!

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